WCCE10
ECCE11
ECAB4

Barcelona, Spain
1st - 5th October, 2017

10th World Congress of Chemical Engineering

10th World Congress OF CHEMICAL ENGINEERING

11th European Congress OF CHEMICAL ENGINEERING

4th European Congress OF APPLIED BIOTECHNOLOGY

Chemical and Biochemical Engineering in a Global World: Solutions 4 Global Challenges

A place for all the Chemical and Biochemical engineering community

SCIENTIFIC & TECHNICAL PROGRAMME

Organized by EFCE-Spain Group:

ANQUE · Enginyers Industrials de Catalunya · SEQUI · AIQS

Sponsors /Supporters

TECNICAS REUNIDAS · CEPSA · REPSOL · TOTAL COMMITTED TO BETTER ENERGY · BASF · DOW · gasN2 · Sabadell · WILEY · WILEY-VCH · fciQuc · SUSCHEM · QUIMICA Y SOCIEDAD · Diputació Barcelona

EXPOQUIMIA The International Chemistry Event

www wcce10 org

INDEX

- Welcome 3
- Organizers and Committees 4
- Sponsors 12
- Exhibitors & Top Tables 14
- General Information 15
- Social Events 18
- Guidelines for authors 19
- Plenary Speakers 21
- Ancillary Events 23
- Program at a glance 25
- Scientific & Technical Program Sunday 1st 35
- Scientific & Technical Program Monday 2nd 37
- Scientific & Technical Program Tuesday 3rd 71
- Scientific & Technical Program Wednesday 4th 121
- Scientific & Technical Program Thursday 5th 159
- Poster sessions 182

Status of the program as of September 21th, 2017.

The publisher is not responsible for changes, typesetting or printing errors.

The information provided here is supplied by the various congress partners. No liability for accuracy can be assumed.

WELCOME

The EFCE-Spain group (ANQUE, AIQS, AEIC and SEQUI), the congress partner (Expoquimia), congress sponsors, exhibitors and supporters have the pleasure of welcoming you to the 10th World Congress of Chemical Engineering held in conjunction with the 11th European Congress of Chemical Engineering, the 4thEuropean Congress of Applied Biotechnology and its Joint Events.

The World Chemical Engineering Council (WCEC), the European Federation of Chemical Engineering (EFCE) and the European Society of Biochemical Engineering Sciences (ESBES) promote this "three in one" congress. This group of events will be a unique opportunity for you to meet with researchers and specialists in practically all areas of chemical engineering and to improve your strategy for the development of innovative processes that will be vital for the society of tomorrow.

The Congress will take place in an ideal context in place and time. Fira de Barcelona's activity, venues, experience and leadership make it one of the most important trade fair institutions in Europe. Fira holds state-of-the-art meeting rooms, exhibition areas and catering facilities, with a functional layout that we are sure you will enjoy during your stay.

Barcelona is the perfect setting for the congress thanks to its privileged position in the Mediterranean shore, gateway and home of several ancient cultures has always represented the essence of art, culture and progress in Spain. Barcelona is the flagship city of the wealthiest region of Spain, leader in art, design, industry and lifestyle, a must visit for travellers and an endless source of inspiration.

An increasing world population, in a world of finite natural resources, requires ever more innovative Chemical Engineering to solve societal future challenges. If a commercial new or better product must be obtained, if an industrial process must be implanted, if an existing process must be improved, if the environmental impact must be reduced, etc., Chemical Engineering methodology is applicable. The S&T program will bring innovative solutions to respond to major societal challenges. Plenary, Keynote, Invited and Contributed lectures will bring you up to date in all topical areas of modern Chemical and Biochemical Engineering to address Solutions 4 Global Challenges. There will be large poster sessions, workshops, especially for younger people and plenty of time for networking opportunities.

We are honoured by the exceptional response to the WCCE10 and the quality and number of contributions. You have made this event possible. We thank you for that and very specially recognize the incredible work that committees and voluntaries have done to organize the largest world congress to date. We will do our best to make your stay a success, useful, enjoyable and unforgettable.

Welcome to WCE10 and Barcelona!

Carlos Negro
Congress Chair

Honour Committee

His Majesty, King of Spain, Felipe VI de España
Honorary President

Anton Valero
Expoquimia and FEIQUE President

Philippe Tanguy
WCEC President

Rafiqul Gani
EFCE President

Guilherme Ferrerira
ESBES President

Ernesto Castañeda
ANQUE President

Albert Puyuelo
AIQS President

Jordi Renom
AEIC President

Luis Martínez
SEQUI President

Executive Board Committe

Carlos Negro
(Congress Chair)
EFCE-Spain Group Representative
University Complutense of Madrid

Oriol Martínez
(Chairman Exhibition)
AEI Representative & CEO
GasN2

Jaume Soley
(Executive Director)
SEQUI Representative
Mirestgen

Lorenzo Baselga
(Secretary)
ANQUE Representative
ANQUE Technical General Secretary

Rosa Nomen
(Chairperson Local Organization)
AIQS Representative
IQS Secretary General

Chairs: of other Committees

Felix Garcia-Ochoa
Scientific and Technical Program
U. Complutense

Ángel Irabien
International Relations Chair
U.Cantabria

Anton Valero
President of Expoquimia
Chair Industrial Program
President Dow Chemical Iberica
President FEIQUE

Juan Antonio Labat
Cochair Industrial Program
General Manager of FEIQUE

Juan José Rodriguez
Student Program
U. Autónoma of Madrid

Valentín González
Comunication Director
U. Autónoma of Madrid

International Advisory Committee

Roland Andersson
Executive Director CSChE
Canada

Justin Blades
Chief Executive IChemE
UK

Gouhua chen
APCChE President
Hong Kong

Antonio Estevez
IACChE
Puerto Rico

Guilherme Ferreira
President of ESBES
DSM Biotech. Centre, NL & U.
Algarve Portugal

Rafiqul Gani
President of EFCE
DTU, Technical University of Denmark

Ángel Irabien
International Relations Chair
University of Cantabria
Spain

Greg Lewin
WCEC Past Chairman
Australia

Willi Meier
DECHEMA e.V.
Germany

Carlos Negro
WCCE10 chair
UCM Madrid

Oscar Pagola
President of AAIQ and Vicepresident of IACChE
Argentina

Martine Poux
ECCE10-ECAB3 general coordinator
University of Toulouse -
INP - Laboratory on Chemical Engineering
France

Philippe Tanguy
WCEC Chairman
Total
France/ Germany

June Wispelwey
Executive Director AIChE
USA

▶ Scientific Committee

SCIENTIFIC STEERING COMMITTEE

Félix García-Ochoa (Chairman)
U.Complutense de Madrid
Spain

Angeles Blanco (Secretary)
U. Complutense Madrid
Spain

Concepción Monte (Vicesecretary)
U. Complutense Madrid
Spain

MEMBERS

Jamal Chaouki
S&T Chairman WCCE8-Montreal 2009
Ecole Polytechnique Montreal
Canada

Guilherme Ferreira
President of ESBES
DSM Biotech. Centre, NL & U. Algarve
Portugal

Rafiqul Gani
President of EFCE
DTU, Technical University of Denmark
Denmark

Ignacio Grossmann
Carnegie Mellon University
USA

Angel Irabien
U. Cantabria
Spain

Hwayong Kim
S&T Chairman of WCCE9-Seoul 2013
U. Seoul
South Korea

Jean-Marc Lelann
Scientific Vice-President of EFCE
ENSIACET Toulouse
France

David Shallcross
S&T Chairman of WCCE6-Melbourne 2001
U. Melbourne
Australia

Greg Stephanopoulos
AIChE President
Massachusetts Institute of Technology
USA

Ganapati Yadav
Institute of Chemical Technology
Mumbai
India

Alberto Bandoni
PLAPIQUI, UNS
Argentina

Jian-Feng Chen
Beijing University of Chemical Technology
China

Shuichi Yamamto
Biomedical Engineering Center (YUBEC)
Yamaguchi University
Japan

TOPIC COORDINATORS

TOPIC 1.
Knowledge, Education & Training

David Shallcross (Chair)
Melbourne University
Australia

Eric Schaer (Chair)
ENSIC
France

Jenni Case
Cape Town University
South Africa

Bingzhen Chen
Tsinghua University
China

Sebastian Engel
Dortmund University
Germany

Jarka Glassey
Newcastle University
United Kingdom

Carmen González
University of Barcelona
Spain

Redhouane Henda
Laurentian University
Canada

M. Sam Mannan
Texas A&M University
USA

Pitt Martin
Sheffield University
United Kingdom

Kamarza Mulia
Indonesia University
Indonesia

TOPIC 2.
Unit Operations & Separation Processes

Eva Sorensen (Chair)
UCL
UK

Jerzy Baldyga
Warsaw University of Technology
Poland

Elisabetta Brunazzi
Pisa University
Italy

Jean Charles de Hemptinne
IFP Energies Nouvelles
France

Antonio Marcilla
Alicante University
Spain

Martin Morgeneyer
Université de Technologie de Compiègne
France

Álvaro Ramírez
UPM
Spain

Ana Soto
Santiago University
Spain

TOPIC 3.
Chemical Reaction Engineering

Jamal Chaouki (Chair)
Polytechnique Montreal
Canada

Olaf Hinrichsen
TU Munchen
Germany

Faical Larachi
Laval University
Canada

Martin Olazar
Pais Vasco University
Spain

Manuel Rodrigo
UCLM
Spain

Eberhard Schlücker
Erlangen University
Germany

Alfredo Soldati
Udine University
Italy

TOPIC 4.
Process Systems Engineering

Ignacio Grossmann (Chair)
Carnegie-Mellon University
USA

Joaquin Casal
UPC
Spain

Antonio Espuña
UPC
Spain

Bruno Fabiano
Genova University
Italy

Thomas Van Gerven
KU Leuven
Belgium

Jiri J. Klemes
Pannonia University
Hungary

Miguel Ladero
UCM
Spain

Rafael Mato
Valladolid University
Spain

TOPIC 5.
Product Engineering & Advanced Materials

Ulrich Brockel (Chair)
Birkenfeld University
Germany

José M. Asua
País Vasco University
Spain

Markus Busch
TU Darmstadt
Germany

Tomás Cordero
Málaga University
Spain

Christoph Herwig
Vienna University of Technology
Austria

Reinhard Kohlus
Hohenheim University
Germany

Inmaculada Ortíz
Cantabria University
Spain

Jens Uhlemann
Bayer Tech. Serv.
Germany

TOPIC 6.
Applied Biotechnology

Guillermo Ferreira (Chair)
Algarve University
Portugal

Joaquim Cabral
Lisbon University
Portugal

Manuel Cánovas
Murcia University
Spain

Mario Díaz
Oviedo University
Spain

Michel Eppink
Wageningen University
The Netherlands

Jarka Glassey
Newcastle University
United Kingdom

Alois Jungbauer
Wien University
Austria

Jack Legrand
Nantes University
France

Juan Lema
Santiago University
Spain

Angel Mohedano
UAM
Spain

Marcel Ottens
TU Delft
The Netherlands

Victoria Santos
UCM
Spain

Francisco Valero
UAB
Spain

Juan Carlos Villar
INIA
Spain

Luuk Van Der Wielen
TU Delft
The Netherlands

TOPIC 7.
Environmental & Sustainable Chemical Engineering

Ángel Irabien (Chair)
Cantabria University
Spain

Juan Adanez
CSIC-Zaragoza
Spain

M. Uxue Alzueta
Zaragoza University
Spain

Jesús Arauzo
Zaragoza University
Spain

Adisa Azapagic
Manchester University
United Kingdom

Henk Van Den Berg
University of Twente
The Netherlands

Sophie Duquesne
Lille University
France

Eloy García
Alcala University
Spain

Philippe Garrigues
ISM
France

Peter Jaffe
Princeton University
USA

Francois Marechal
EPFL
Switzerland

Xavier Querol
CSIC-Barcelona
Spain

Juan José Rodriguez
UAM
Spain

Fernando Rubiera
INCAR-CSIC
Spain

David Serrano
URJC
Spain

Ane Urtiaga
Cantabria University
Spain

Local Committee

CHAIRPERSON

Rosa Nomen
IQS-Universitat Ramon Llull, Spain

VICE-CHAIRPERSON

Moisès Graells
Universitat Politècnica de Catalunya, Spain

MEMBERS

Ricard Aguirre
Boehringer Ingelheim, Spain

Jesús Colprim
Universitat de Girona, Spain

José Luís Cortina
Cetaqua, Spain

Josep Antón Feliu
Inprocessgroup, Spain

Ricard Garcia-Valls
Universitat Rovira i Virgili, Spain

Carme González
Universitat de Barcelona, Spain

Magali Gros
Technip, Spain

Angel Eduardo Gutiérrez
IQS-Universitat Ramon Llull, Spain

Jordi Martorell
IQS-Universitat Ramon Llull, Spain

Elsa Pastor
Universitat Politècnica de Catalunya, Spain

Julià Sempere
IQS-Universitat Ramon Llull, Spain

Julio Uribe
Universitat Politècnica de Catalunya, Spain

Francisco Valero
Universitat Autònoma de Barcelona, Spain

Student Committee

Juan José Rodriguez
Chairperson
U. Autónoma Madrid.
Spain, ES

Jordi Bou
Member
U. Politecnica de Catalunya,
ES

Thilina Gunawardhana
Member
Monash U., Clayton.
Australia, AU

Carme Gonzalez
Vice-Chairperson
U. Barcelona.
Spain

Alonso Céspedes-Armella
Member
U. Santiago de Chile.
Chile, EK

Angel Gutierrez
Member
IQS, Instituto Quimico Sarria,
Barcelona. Spain, ES

Raquel Ibañez
Vice-Chairperson
U. Cantabria, Santander.
Spain, ES

Hector De la Hoz Siegler
Member
U. Calgary,
CA

Björn Heidrich
Member
Münster University of Applied Sciences. Germany, DE

Francisco Heras
Secretary
U. Autónoma Madrid,
ES

Jesus Esteban
Member
U. Birmingham.
United Kingdom, UK

Noemi Merayo
Member
U. Complutense Madrid,
ES

Manuel Alvarez
Member
U. Cantabria, Santander.
Spain, ES

Rebecca Frauzem
Member
DTU, Technical U. Denmark.
Denmark, DK

Julio Uribe
Member
U. Politecnica Catalunya,
ES

Negin Amini
Member
Monash U., Clayton. Australia,
AU

Alicia Garcia-Costa
Member
U. Autonoma Madrid.
Spain, ES

Pei Yang
Member
U. Manchester,
UK

Joint Event Coordinators

(JE-ESCAPE27)

Antonio Espuña. Technical University of Catalonia, (ES)
Jiří Jaromír Klemes. Pázmány Péter Catholic University, (HU)

(JE-IPIC1/EPIC6/APSPIS3)

Tom Van Gerven, Chair. KU Leuven University, (BE)
Miguel Ladero. Complutense University of Madrid, (ES)
Rafael Mato. Valladolid University, (ES)
Giorgios Stefanidis. KU Leuven, (BE)
Phillip R. Westmoreland. North Carolina State University, (USA)
Dionisios G. Vlachos. Delaware University, (USA)
Neil Foster. Curtin University. (AU)

(JE-ICOSSE´17)

Heriberto Cabezas. Co-chair. EPA-USA/Pázmany Péter Cath. University, (HU)
Kimberly Ogden. Co-chair. Arizona University, (USA)
Adisa Azapagic. University of Manchester, (UK)
Richard Darton. Oxford University, (UK)
Darlene Schuster. AIChE, (USA)
Angel Irabien. University of Cantabria, (ES)

(JE-PARMAT 2017)

Álvaro Ramírez-Gómez, Chairman. Mechanics of Particulate Solids
Martin Morgeneyer, Co-Chairman. Characterization of Particulate Systems
Stefan Heinrich. Agglomeration
Arno Kwade. Comminution and Classification
Marco Mazzotti. Crystallization
Angélique Leonard. Drying
Jerzy Baldyga. Mixing
Alfredo Soldati. Multiphase Fluid Flow

(JE-PSS)

Shakeel H Kadri. Center of Chemical Process Safety, (USA)
Piet Knijf. European Process Safety Center, DSM, (NL)
Trish Kerin. IChemE Safety Center, (AU)
Sam Mannan. Mary Kay O'Connor Process Safety Center, (USA)
Bruno Fabiano. Working Party of Loss Prevention-EFCE, (IT)
Rosa Nomen, IQS, (ES)

(JE- INTSYMPLIGNCELLMAT 2017)

Song Won Park, Chair. U. Sao Paulo, (BR)
Juan Carlos Villar. INIA, (ES)
Lew Paul Christopher. Lakehead U. – BRI, (CA)
Maria Cristina Area. UNaM, (AR)

(JE- ISSB-7)

John Grace. University of British Columbia, (CA)
Gartzen Lopez. University of the Basque Country UPV/EHU, (ES)
Martin Olazar. University of the Basque Country UPV/EHU, (ES)

(JE-IUT)

Alberto Arce, Chair. Santiago de Compostela University, (ES)
Susana Bottini. Plapiqui, (AR)
Ioannis Economou. Texas A&M University at Qatar, (QA)
Richard Elliot. Akron University, (USA)
Jean-Charles de Hemptinne. IFP Energies Nouvelles, (FR)
Ljudmila Fele-Zilnik. National Institute of Chemistry, (SI)
Antonio Marcilla. Alicante University, (ES)
Paul Mathias. Fluor Corp., (USA)
Alberto Striolo. University College London, (UK)

(JE-AOPS)

Gianluca LiPuma, Chair. Loughborough University, (UK)
Carolina Belver. UAM, (ES)
Dionysios D. Dionysiou. Cincinnati University, (USA)
Daphne Hermosilla. Valladolid University, (ES)
Guohua Chen. HKUST Hong Kong, (CN)
Márcia Dezotti. Universidad Federal de Río de Janeiro, (BR)
Santiago Esplugas. University of Barcelona, (ES)
Xie Quan. Dalian University of Technology, (CN)

(JE-CFD)

Jose R. Nunhez, Chair. State University Campinas, (BR)
Jos Derksen. Aberdeen. University, (UK)
Vivek V. Ranade. National Chemical Laboratory, (IN)

(JE-FIBRE SUSPENSIONS)

Maria Graça Rasteiro, Chair. University of Coimbra, (PT)
Elena Fuente. Complutense University of Madrid, (ES)
Cristian Marchioli. University of Udine, (IT)
Fredrik Lundell. KTH, (SE)
Bandaru V. Ramarao. State University of New York, (USA)

(JE- NANOCELLULOSES)

Gil Garnier, Chair. Monash University, (AU)
Marc Delgado-Aguilar. Girona University, (ES)
Noemi Merayo. Complutense University of Madrid, (ES)

(JE-ELECTROCHEMICAL ENGINEERING)

Manuel Rodrigo, Chair. Universidad Castilla la Mancha, (ES)
Ann Cornell. KTH, (SE)
Karel Bouzek. UCT, (CZ)
Enric Brillas. Barcelona University, (ES)
Vicente Montiel. Alicante University, (ES)
Ignacio Sirés. Barcelona University, (ES)
Ane Urtiaga. Cantabria University, (ES)

(JE-GAS HYDRATES)

Peter Englezos, Chair. University of British Columbia, (CA)
Praveen Linga. National University of Singapore, (SG)

SPONSORS

Main Congress Partners

TECNICAS REUNIDAS

CEPSA

REPSOL

Gold Sponsors

BASF
We create chemistry

Silver Sponsors

DOW

Bronze Sponsors

gasN2

Sabadell

Global Grand Challenge Sponsor: Energy

TOTAL
COMMITTED TO BETTER ENERGY

Chem-E-Car Competition Sponsor

AIChE Chem-E-Car Competition® WCCE10

Others

WILEY WILEY-VCH

Supporters

feiQue
Federación Empresarial de la Industria Química Española

SUSCHEM ES
Sustainable Chemistry

FORO QUIMICA y SOCIEDAD
www.quimicaysociedad.org

Diputació Barcelona
#DibaOberta

EXHIBITION & TOP TABLES

EXPOQUIMIA The International Chemistry Event

Expoquimia will be held in Hall 2 & 3 at Fira de Barcelona Gran Via from 2 to 6 October 2017. Monday to Thursday from 9:30h to 18:30h and Friday from 9:30h to 15h.

Expoquimia, as congress partner is responsible for the exhibition. More than 600 companies will exhibit products and services at Hall 2 & 3, 30.000 m2 of exhibition full of innovation. As congress delegate you have free access with your badge to Expoquimia, Eurosurface and Equiplast.

Expoquimia, Eurosurfas and Equiplast is a triple trade show event and the largest platform for promoting and disseminating the applied chemicals sector in Europe and internationally. Expoquimia focusses on Chemistry and its applications. Equiplast is the International Plastics and Rubber Exhibition, and Eurosurfas, the International Paint and Surface Treatment Exhibition.

SMART CHEMISTRY, SMART FUTURE

Smart Chemistry is a unique meeting forum led by the Spanish Chemical Industry Federation (FEIQUE) and Expoquimia, in which the Spanish chemical industry's leading companies and organisations work together to achieve one goal: showing chemistry's enormous capacity to provide answers for mankind's economic, social and environmental needs, as well as attracting productive investments to the industry.

Smart Chemistry Smart Future

Smart Chemistry Smart Future hosts a unique exhibition, structured around two key themes, showcasing chemistry's enormous capacity to improve and change our world through innovative solutions for the major issues that affect our lives.

- Smart World: The contribution by chemical innovation to sustainable development and global solutions. Water Solutions // Energy Efficiency Solutions // Environment & Circular Economy
- Smart Life: The contribution of chemistry to innovative solutions aimed at improving each individual's quality of life. Health Care // Move Smart // Smart Building

The project Smart Chemistry, Smart Future will be held in Hall 3, Aisle D | Stand 520 at Fira de Barcelona Gran Via from 2 to 6 October 2017. Monday to Thursday from 9:30h to 18:30h and Friday from 9:30h to 15h

The WCCE10 Registration accreditation will grant you access to Expoquimia and Smart Chemistry Smart Future!

Top Tables At Congress Venue, Hall 8

WCCE11 Buenos Aires

Canadian Society for Chemical Engineering | For Our Future

Springer

DE GRUYTER

WILEY-VCH

IChemE Institution of Chemical Engineers

AIChE The Global Home of Chemical Engineers

Fraunhofer ICT – IMM

EFCE

ESBES European Society of Biochemical Engineering Sciences

DECHEMA

HNP Mikrosysteme

中国化工学会 IESC

SCEJ The Society of Chemical Engineers, Japan

flamac a division of SIM

mi micro innovation

ELSEVIER

PSE

SOPAT

Conference Venue and Date

The 10th World Congress of Chemical Engineering is held at Fira de Barcelona Gran Via, from Sunday October 1st, to Thursday October 5th 2017.

Fira de Barcelona

Fira Gran Via – North Access. Hall 8
Carrer Foc 37 - 08038 Barcelona

You can also reach the venue (Hall 8) from the Hall Europa, the Expoquimia main entrance by:

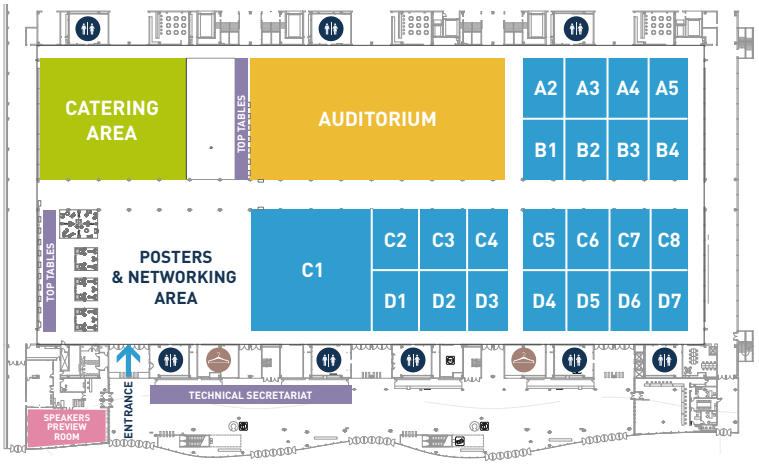
- Shuttle bus (see timetable in this program)
- Walking, inside through the different halls (20 min aprox) – Entrance available from Monday to Thursday from 09:30h to 18:30h

Technical Secretariat

Maria Cubi, 4 - Pral. | 08006 Barcelona (SPAIN)
Tel. +34 932.388.777 - Fax. +34 932.387.488
wcce10@wcce10.org

GRUPOPACIFICO
The power of meeting

Floor Maps



APP

Download the free WCCE10 Mobile App to Access the most up-to-date Congress information:

- Access full programme, exhibitors, maps & practical information
- Search by Day, Topic, or Type
- Create your personalised programme (synchronised with your online Scientific Programme & Planner)
- Receive the latest news & follow #WCCE10 Twitter feed

DECHEMA CongressEngine / WCCE10
DECHEMA e.V.

Available on the App Store

GET IT ON Google Play

Shuttle Bus Service

During the Congress, Fira de Barcelona offers a shuttle bus service as follows:

- **October 1st :** From 14:30h to 19:30h
- **October 2nd and October 3rd:** From 7:30 to 19:30h
- **October 4th and October 5th:** From 7:30 to 19:00h
- **October 6th:** From 8:30h to 16:00h

Bus stops:

Public Transport

The venue has its own metro station (FIRA) with a tunnel leading directly into the venue. WCCE10 recommends using public transport wherever possible.

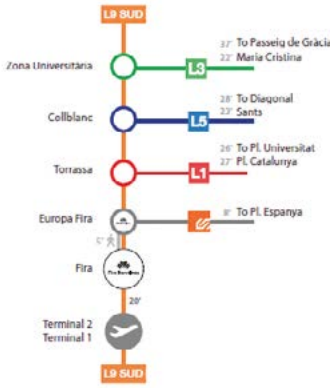
SUBWAY: Line 9 Sud from the airport to Fira Gran Via, and into Barcelona city centre. Two Metro stops:

- Fira (tunnel directly into Expoquimia Main Hall)
- Europa Fira (15 minute walk to Hall 8)

BY BUS: Bus line 79, stop, Av Joan Carles I-Botànica is the nearest stop to Fira Gran Via.

BY TAXI TO/FROM THE VENUE: Ask the driver to drop you off at Fira Gran Via NORTH entrance

Metro lines connections to and from



Registration Desk Opening Times

Registration desk opening times and technical secretariat schedule are outlined below:

- **Sunday, October 1st:** from 03:00 pm to 7:00 pm
- **Monday, October 2nd:** from 8:00 am to 08:00 pm
- **Tuesday, October 3rd:** from 8:00 am to 8:00 pm
- **Wednesday, October 4th:** from 8:00 am to 8:00 pm
- **Thursday, October 5th:** from 8:00am to 6:30pm

Please go to the registration desk upon arrival to the venue to collect your congress documents.

Speakers' Preview Room

Opening times:

- **Sunday, October 1st:** from 03:00 pm to 7:00 pm
- **Monday, October 2nd:** from 8:00 am to 08:00 pm
- **Tuesday, October 3rd:** from 8:00 am to 8:00 pm
- **Wednesday, October 4th:** from 8:00 am to 8:00 pm
- **Thursday, October 5th:** from 8:00am to 6:30pm

- All session rooms are connected to the Preview Room, and all presentations must be uploaded via the Speaker Services Center in advance please. Presentations may not be uploaded directly onto the computers in the session rooms. Use of your own computer is not possible.
- Please check in with the Preview Room at least 4 hours in advance of your scheduled session. The Speaker Services Center will ensure that presentations are problem-free onsite and your participation is critical to our success.

Wi-Fi

The wifi acces is free for all attendants to the congress. This network will be broadcasted to all congress venue areas, (Hall 8). Access to this WiFi network is through the following password:

- **Network:** WCCE10
- **Password:** wcce2017

Medical Assitance & Insurance

Emergency phone: 112

Participants are advised to make their own arrangements regarding travel insurance and medical assistance during the Congress. Neither the Organization nor the Secretariat are able to accept any responsibility whatsoever for damage or injury to persons or their belongings during the Congress

Badges & Security

It is essential that you wear your personal badge at all times while in the Congress venue and during the Social Events, as it is the official entrance pass to scientific sessions. For the Social Events, it will also be necessary to present the corresponding ticket.

This badge will grant you access to all the different exhibition areas at EXPOQUIMIA (opening, October 2nd, 2017).

Attendance Certificate

Attendance Certificates will be issued by the General Secretariat and it will be sent by e-mail after the congress.

Lunch

The lunches are included in the registration fees. You will have a ticket with your badge that must be shown upon your arrival in the lunch area.

SOCIAL EVENTS

A once in a lifetime opportunity to access historical and cultural venues of a city with one of the richest monumental and cultural heritage in the world, Barcelona.

The social program is fast progressing. A number of exclusive venues will host the main congress social events including:

Sunday, 1st October: 17:00h - 19:00h

Welcome Reception: At the main hall of the congress venue

Tuesday, 3rd October:

Visit and Networking at Pobla Espanyol, a Spanish experience (only for PhD Students)

Poble Espanyol is a magical place to enjoy with your colleagues and meet new people. An outdoor area with no traffic that houses architecture, modern art, traditions and next-generation technology to offer you not simply a visit, a complete experience.

A peaceful and pleasant stroll through the complex will allow you to see the varied architectural heritage of the Peninsula, ranging from the Andalusian quarter to Catalan Romanesque monastic architecture….while having a free drink (ticket available in your entry badge). **Enjoy…relax…discover!**

Monday, 2nd October 19:00 – Wednesday, 4th October 17:30h
CHEESE & WINE RECEPTION at FIRA Congress Venue, Posters areas, (ground and 1º floor)

Wednesday, 4th October Gala Dinner, 20:30h

Congress Gala will be held at the Barcelona Maritime Museum (Atarazanas Reales). The building is of Gothic style, its construction was carried out in a first stage between 1283 / 1328 and the second between 1328 / 1390. Subsequent reforms and extensions have been made, basically keeping the original structure.

Registration required, You will have a ticket with your badge that must be shown upon your arrival in the venue.

Selection of interesting activities to do in the city:

- **Parque Güell Sightseeing Tour:** Monday, October 2nd and Tuesday October 3rd
- **Sagrada Familia Sightseeing Tour:** Monday, October 2nd and Tuesday October 3rd
- **Barcelona Modernista Sightseeing Tour:** Monday, October 2nd and Tuesday October 3rd

Registration is required, if you did not register, ask to the Technical Secretariat Desk

Oral Presentations

ORAL PRESENTATIONS TIME SLOTS

Speakers are requested not to exceed the allocated time. The time schedule will be strictly followed due to the nature of the congress program, which includes more than 24 parallel sessions running at the same time.

Time schedule: (unless otherwise indicated in your specific session).

- **Plenary Lectures:** 60 min (50+10 min questions)
- **Keynote Lectures:** 30 min (25 + 5 min questions)
- **Oral communications:** 15 min (12 + 3 min questions)
- **Short presentations:** 5 min. A common discussion can be arranged at the end of a session for a few minutes.

ORAL PRESENTATIONS UPLOAD

- Speakers are requested to bring their presentation files on a flash drive (USB memory stick) to the "Speakers´preview room". Ideally, the day before of the presentation to prevent unforeseen.
- Please, check the final scientific program to identify the day of your presentation.
- Only ppt, pptx or pdf files would be acceptable. 4:3 Projection. If the presentation includes audio (sound or voice), animation or short movie file(s), speakers are advised to save each file separately and provide it to the technical staff of the "Speakers´preview room" for testing, together with your presentation file.
- Use of your own computer is not possible.
- If you have any special requirements, please make sure to get in contact with the technical staff at the "preview room" good time in advance, ideally 1 day before.

Poster Presentations

Presenting authors are expected to be in front of their posters during the poster session time. Please, check the final scientific program to identify the day of your poster presentation.

POSTER FORMAT

The poster board surface will be 90 x 220 cm. The recommended size of the posters is: 90 cm (wide) X 110 cm (high). The presentation number assigned to your poster should not be placed on your poster. The poster boards will be numbered for you.

SETTING-UP AND TAKING DOWN TIMES

Poster presenting authors are responsible for setting-up and taking down their poster. Self-adhesive pads for posting will be offered by the organizer.
In case that you have printed your poster using the "online poster print service", you will be able to collect you poster in the registration area.

Setting-up and taking down of posters will take place as follows:

- **Posters scheduled for Poster Session 1:** MONDAY AND TUESDAY: should be fixed on the corresponding board on Monday 2nd from 08:00 to 19:00. They must be removed on Tuesday 3rd from 16:00 to 18:00.
- **Posters scheduled for Poster Session 2:** WEDNESDAY AND THURSDAY should be fixed on the corresponding board on Wednesday 4th from 08:00 to 17:30. They must be removed on Thursday 5th from 12.45 to 13.30.
- Please refer to the Scientific Program for the your poster session date when you have to hang and remove your poster, (see Poster Sessions)

Posters which haven't been removed before the due time shall be detached and dumped after the corresponding session. Unclaimed posters are not the responsibility of the conference organizers and will be disposed.

ESCAPE-27 Presentation Guidelines

Please take into account the following rules:

- Keynote Lectures: 30 min (25 + 5 min questions)
- Oral presentations: 20 minutes (15 min + 5 questions)

SETTING-UP AND TAKING DOWN TIMES

Poster presentations: Setting-up and taking down of posters will take place as follows:

- **Poster Session 1:** Monday 2nd from 08:00 to 18:00
- **Poster Session 2:** Tuesday 3rd from 08:00 to 18:00
- **Poster Session 3:** Wednesday 4th from 08:00 to 18:00

The posters should be put on the stands in the morning and removed by the end of the day. Posters left on the board after your available time will be removed by the Conference staff.

Please refer to the Scientific and Technical Program for the date when you have to hang and remove your poster, (see Poster Sessions)

Plenary Speakers: Main Auditorium

Monday, October 2nd | 10:00 – 11:00
Ignacio E. Grossman
Department of Chemical Engineering Center for Advanced Process Decision Making. Carnegie Mellon University,Pittsburgh, USA
"Evolution of Process Systems Engineering and Future Trends in Research"

Monday, October 2nd | 14:30 – 15:30
Jackie Y. Ying
Institute of Bioengineering and Nanotechnology, Singapore
"Tackling Global Challenges with the Nanotechnology Toolbox"

Tuesday, October 3rd | 10:00-11:00
Miguel Paradinas
Deputy CEO, Técnicas Reunidas
"Engineering strategies for a growing world: TR Experience"

Tuesday, October 3rd | 14:30-15:30
Molly Stevens
Department of Bioengineering, Imperial College London, UK
"Bio-responsive hybrid materials for regenerative medicine and biosensing"

Wednesday, October 4th | 10:00 –11:00
Philippe A.Tanguy
Vice President R&D Partnerships Total, France
"Solving Global Energy Issues"

Wednesday, October 4th | 14:30-15:30
P.V. Dankwerts Memorial Lecture*. **Rakesh Agrawal**
Winthrop E. Stone Distinguished Professor in the School of Chemical Engineering at Purdue University, USA.
"Challenges and Opportunities for Chemical Engineering in an Emerging Solar Economy"

Thursday, October 5th |10:00 – 11:00
Peter Schuhmacher
President, Process Research & Chemical Engineering, BASF, Germany
"Process Research in the Chemical Industry"

Thursday, October 5th | 14:30-15:30
James (Jim) R. Fitterling
Chief Operating Officer for the Materials Science Division of DowDuPont. USA

Plenaries Speakers ESCAPE27

Monday, October 2th | 14:30-15:30 (Room C1)
Gintaras V. (Rex) Reklaitis
Purdue University, West Lafayette, USA
"Prospects and Challenges for Process Systems Engineering in Healthcare"

Tuesday, October 3th | 14:30-15:30 Room C1
Robin Smith
Manchester University, Manchester, UK.
"Process Integration: Current Status and Future Challenges"

Plenaries Speakers ICOSSE´17

Tuesday, October 3th | 14:30-15:30 Room C6
Renata Christ
Secretary of the Intergovernmental Panel on Climate Change IPPC (Retired)
" Climate change science, The Paris agreement and the SDGs"

Wednesday, October 4th | 14:30-15:30 Room C1
Jacqueline Cramer
Utrecht Sustainability Institute, NL
" Circular Cities - The Case of the Amsterdam Metropolitan Area"

Saturday 30th September		
11:00 - 16:00 h	EFCE Executive Board	ROOM E2 - 1st Floor
16:30 - 18:30 h	ECCE13/ECAB6	ROOM E2 - 1st Floor

Sunday 1st October		
09:00 - 12:15 h	ESBES Board	ROOM E1 - 1st Floor
09:00 - 14:00 h	EFCE-WP on CAPE	ROOM E2 - 1st Floor
09:00 - 16:30 h	EFCE-WP on Education	ROOM E6 - 1st Floor
12:30 - 14:30 h	ESBES General Assembly	ROOM E1 - 1st Floor
14:00h-16:00h	ModLife project meeting	ROOM E8 - 1st Floor
14:30 - 16:15 h	EFCE General Assembly	ROOM E7 - 1st Floor

Monday 2nd October		
07:30 - 08:30 h	Education for Chemical Engineers - Breakfast meeting	Hotel Porta Fira
11:30 - 13:00 h	ESBES Microalgae Bioengineering Section Meeting	ROOM E1 - 1st Floor
12:30 - 15:00 h	EURECHA	ROOM E6 - 1st Floor
13:00 - 14:30 h	EFCE Working Party on Agglommeration	ROOM F1 - 1st Floor
13:00 - 14:30 h	PSE Spain group	ROOM F7 - 1st Floor
13:00 - 14:30 h	EFCE - Working Party on Multiphase Fluid Flow	ROOM F12 - 1st Floor
14:00 - 15:30 h	EFCE - Working Party on Chemical Reaction Engineering	ROOM F10 - 1st Floor
14:30 - 15:30 h	IQ-RSEQ Group	ROOM E7- 1st Floor
14:30 - 15:30 h	PARMAT2017 Chairs meeting	ROOM F14 - 1st Floor
15:30 - 17:30 h	EFCE - Working Party/Section Chairs	ROOM E1 - 1st Floor
15:30 - 17:30 h	EFCE - Scientific Committee /WPs & S President´s meeting	ROOM E2 - 1st Floor
17:30 - 19:00 h	EFCE - Working Party on Characterization of Particulate Systems	ROOM E2 - 1st Floor

Tuesday 3rd October		
07:00 - 08:00 h	Chemical Engineering Research and Design - Breakfast meeting	Hotel Porta Fira
11:00 - 12:00 h	EFCE - Section on Membrane Engineering	ROOM E2 - 1st Floor
12:30 - 17:30 h	CACE Advisory Board Working lunch meeting	ROOM E6 - 1st Floor
13:00 - 14:30 h	EFCE - Section on Product Design & Engineering	ROOM E5 - 1st Floor
13:30 - 15:00 h	EFCE - Working Party on Quality by Design	ROOM E4 - 1st Floor
14:00 - 16:00 h	EFCE - Working Party on Process Intensification	ROOM E2 - 1st Floor
18:00 - 19:45 h	EFCE - Section on Energy (inaugural meeting)	ROOM E7 - 1st Floor

Wednesday 4th October		
08:30 - 10:00 h	Meeting on Thermodynamic of electrolytes	ROOM E6 - 1st Floor
09:00 - 12:30 h	EFCE - Working Party on Loss Prevention	ROOM E2 - 1st Floor
13:00 - 14:30 h	EFCE - Working Party on Mixing	ROOM F3 - 1st Floor
13:00 - 14:30 h	ESBES M3C Section Meetings	ROOM E1 - 1st Floor
13:00 - 16:00 h	World Chemical Engineering Council Meeting	ROOM E7 - 1st Floor
14:00 - 17:30 h	EFCE - Working Party on Loss Prevention	ROOM E2 - 1st Floor
17:45 - 19:00 h	EFCE - Working Party on Polymer Reaction Engineering	ROOM E6 - 1st Floor

Thrusday 5th October		
13:00 - 14:30 h	WCCE10 Awards Panel Working Lunch	ROOM E7 - 1st Floor

SUNDAY 1st OCTOBER

15:00 h	REGISTRATION OPENS
17:00 - 19:00 h	WCCE10 Welcome Address and Cocktail (Main Hall of the Congress Venue)

MONDAY 2nd OCTOBER

	Room A2	Room A3	Room A4	Room A5	Room B1
09:00 - 10:00 h	OPENING & AWARDS CEREMONY (Main Auditorium)				
10:00 - 11:00 h	PLENARY LECTURE: Ignacio E. Grossmann Department of Chemical Engineering Center for Advanced Process Decision Making. Carnegie Mellon University,Pittsburgh, USA "Evolution of Process Systems Engineering and Future Trends in Research"				
11:00 - 11:30 h	COFFEE - POSTERS				
11:30 - 13:00 h	TOPIC 6.1 Biomass Pretreatment	JE-Process Safety-Education	JE- SPOUTED BED Fundamentals	JE-IPIC-SPIRE session	TOPIC 5.2 Nanocarbons & Nanocomposites
13:00 - 14:30 h	LUNCH				
14:30 - 15:30 h	PLENARY (Main Auditorium) Jackie Y. Ying. Institute of Bioengineering and Nanotechnology, Singapore. "Tackling Global Challenges with the Nanotechnology Toolbox"				
15:30- 16:00 h	COFFEE - POSTERS				
16:00 - 17:30 h	TOPIC 6.1 Enzyme Eng.	JE- Process Safety-Leadership	JE- SPOUTED BED Simulation	JE-IPIC Batch to Continuous 1	TOPIC 5.2 Exp. Strategies Along QbD
17:30 - 19:00 h	TOPIC 6.1 Reactor Design & Eng.1	JE- Process Safety-Management 1	JE- SPOUTED BED Scaling up & Applications	JE-IPIC Teaching/Batch to Continuous 2	TOPIC 5.2 Functionalized Nanofilaments
19:00 h	Cheese& Wine Reception around the Posters				

MONDAY 2nd OCTOBER

	Room B2	Room B3	Room B4	Room C1	Room C2
09:00 - 10:00 h	OPENING & AWARDS CEREMONY (Main Auditorium)				
10:00 - 11:00 h	PLENARY LECTURE: Ignacio E. Grossmann Department of Chemical Engineering Center for Advanced Process Decision Making. Carnegie Mellon University,Pittsburgh, USA "Evolution of Process Systems Engineering and Future Trends in Research"				
11:00 - 11:30 h	COFFEE - POSTERS				
11:30 - 13:00 h	JE-LIGNOCELLULOSIC-Biorefineries	JE -Industrial Use Thermodynamics	JE-ESCAPE27 T3.- Planning and Scheduling	JE-ESCAPE27 T2.- Synthesis and Design	TOPIC 2 Separation 1
13:00 - 14:30 h	LUNCH				
14:30 - 15:30 h	PLENARY (Main Auditorium) Jackie Y. Ying. Institute of Bioengineering and Nanotechnology, Singapore. "Tackling Global Challenges with the Nanotechnology Toolbox"			PLENARY ESCAPE Gintaras V. (Rex) Reklaitis: "Prospects and Challenges for Process Systems Engineering in Healthcare" Purdue University, West Lafayette, USA	PLENARY (Main Auditorium)
15:30- 16:00 h	COFFEE - POSTERS				
16:00 - 17:30 h	JE-LIGNOCELLULOSIC Integrated Biorefineries 1	JE-IUT Round Table Data Quality and Assessment, Validation Methods and Error Propagation through the Simulation Software Chair: Paul M. Mathias (USA) J. Abildskov, V. Alopaeus, , F. Eckert, J.W. Magee, C. Peters, Z. Wagner.	JE-ESCAPE27 T2.- Synthesis and Design	TOPIC 6. ACS BIOT ESBES Event Students competition in Biosimilars production Prof. Marcell Ottens (ESBES) and Prof. Bill Kelly (ACS-Biot) Settings the Scene M.H.M. Eppink J. Shultz	JE-ESCAPE27 T7.- CAPE Applications Addressing Global Grand Challenges
17:30 - 19:00 h	JE-LIGNOCELLULOSIC-Integrated Biorefineries 2	TOPIC 2-Thermo Dynamics-Experimental Data-Analisis		TOPIC 6 ACS BIOT ESBES Event Students competition in Biosimilar production Prof Marcell Ottens (ESBES) and Prof. Bill Kelly (ACS-Biot) Student Contest Finals Nominated Student Team 1 Nominated Student Team 2 Nominated Student Team 3	
19:00 h	Cheese& Wine Reception around the Posters				

	Room C3	Room C4	Room C5	Room C6	Room C7	Room C8	Room D1
09:00 - 10:00 h	OPENING & AWARDS CEREMONY (Main Auditorium)						
10:00 - 11:00 h	PLENARY LECTURE: Ignacio E. Grossmann Department of Chemical Engineering Center for Advanced Process Decision Making. Carnegie Mellon University,Pittsburgh, USA "Evolution of Process Systems Engineering and Future Trends in Research"						
11:00 - 11:30 h	COFFEE - POSTERS						
11:30 - 13:00 h	JE- Gas Hydrates 1	TOPIC 7.2 Air Pollution Control 1	JE-ESCAPE27 T4.- Process Monitoring and Control	TOPIC 3 Kinetics & Catalysis 1	JE- Process Safety-Management 2	TOPIC 7.3 Water Management & Treatments 1	JE-CFD Use of CFD to Improve Chemical Processes 1
13:00 - 14:30 h	LUNCH						
14:30 - 15:30 h	PLENARY (Main Auditorium) Jackie Y. Ying. Institute of Bioengineering and Nanotechnology, Singapore. "Tackling Global Challenges with the Nanotechnology Toolbox"						
15:30- 16:00 h	COFFEE - POSTERS						
16:00 - 17:30 h	JE- Gas Hydrates 2	TOPIC 7.2 Air Pollution Control 2	JE-ESCAPE27 T1.- Modeling and Simulation	TOPIC 3 Kinetics & Catalysis 2	JE- Process Safety-Cases Studies & Lessons Learnt 1	TOPIC 7.3 Water Management & Treatments 2	JE-CFD Use of CFD to Improve Chemical Processes 2
17:30 - 19:00 h		TOPIC 7.2 Air Pollution Control 3		TOPIC 3 Kinetics & Catalysis 3	JE- Process Safety-Cases Studies & Lessons Learnt 2	TOPIC 7.3 Water Management & Treatments 3	JE-CFD Use of CFD to Improve Chemical Processes 3
19:00 h	Cheese& Wine Reception around the Posters						

	Room D2	Room D3	Room D4	Room D5	Room D6	Room D7
09:00 - 10:00 h	OPENING & AWARDS CEREMONY (Main Auditorium)					
10:00 - 11:00 h	PLENARY LECTURE: Ignacio E. Grossmann Department of Chemical Engineering Center for Advanced Process Decision Making. Carnegie Mellon University,Pittsburgh, USA "Evolution of Process Systems Engineering and Future Trends in Research"					
11:00 - 11:30 h						ICOSSE Opening Ceremony
11:30 - 13:00 h	TOPIC 2 Crystallisation	TOPIC 3 Chemical & Photochemical Reactors 1	TOPIC 7.6-Clean Energy Processes & New Energy Vectors 1	JE-PARMAT-Dynamic Simulation of Interconnected Solids Processes	TOPIC 2 Heat & Mass Transfer 1	ICOSSE 1-The transition to sustainable living 1
13:00 - 14:30 h				Workshop Particle System Characterization	LUNCH	
14:30 - 15:30 h	PLENARY (Main Auditorium) Jackie Y. Ying. Institute of Bioengineering and Nanotechnology, Singapore. "Tackling Global Challenges with the Nanotechnology Toolbox"					
15:30- 16:00 h						
16:00 - 17:30 h	JE-ESCAPE27 T4.- Process Monitoring and Control	TOPIC 3 Chemical & Photochemical Reactors 2	TOPIC 7.6-Clean Energy Processes & New Energy Vectors 2	JE-PARMAT Mixing	TOPIC 2 Heat & Mass Transfer 2	ICOSSE 2-The transition to sustainable living 2
17:30 - 19:00 h		TOPIC 3 Chemical & Photochemical Reactors 3	TOPIC 7.6-Clean Energy Processes & New Energy Vectors 3	JE-PARMAT-Multiphase Processes & Cristallization	TOPIC 2 Heat & Mass Transfer 3	PhD Workshop Writing a paper-Wiley
19:00 h	Cheese& Wine Reception around the Posters					

	Room A2	Room A3	Room A4	Room A5	Room B1	Room B2
08:30 - 10:00 h	TOPIC 6.1 Reactor Design & Eng.2	TOPIC 3 Kinetics & Catalysis 4	JE- Process Safety-Cases Studies & Lessons Learnt 3	JE-IPIC-Energy Activation	TOPIC 6.5 Biorefineries 1	JE-LIGNOCELLULOSIC Thermo-Conversion & Bioenergy
10:00 - 11:00 h	PLENARY (Main Auditorium) Miguel Pardinas. Depuy CEO, Técnicas Reunidas, Spain "Engineering strategies for a growing world: TR experience"					
11:00 - 11:30 h	COFFEE - POSTERS					
11:30 - 13:00 h	TOPIC 6 Downstream Processing 1	TOPIC 3 Kinetics & Catalysis 5	JE- Process Safety-Cases Studies & Lessons Learnt 4	JE-IPIC Hybrid Process and Multifunctional Process 1	TOPIC 6.5 Biorefineries 2	JE-LIGNOCELLULOSIC Thermo-Conversion & Bioenergy 2
13:00 - 14:30 h	LUNCH					
14:30 - 15:30 h	PLENARY (Main Auditorium) Molly Stevens. Department of Bioengineering, Imperial College London, UK "Bio-responsive hybrid materials for regenerative medicine and biosensing"					
15:30- 16:00 h	COFFEE - POSTERS					
16:00 - 17:30 h	TOPIC 6 Downstream Processing 2	TOPIC 3 Kinetics & Catalysis 6	JE- Process Safety-Cases Studies & Lessons Learnt 5	JE-IPIC-Hybrid Process and Multifunctional Process 2	TOPIC 6.5 Bio-fuels	JE-LIGNOCELLULOSIC Thermo-Conversion & Bioenergy 3
17:30 - 19:00 h	TOPIC 6 Downstream Processing 3	TOPIC 3 Kinetics & Catalysis 7	JE- Process Safety-Cases Studies & Lessons Learnt 6	JE-IPIC-Hybrid Process and Multifunctional Process 3	TOPIC 6.5 Bio-chemicals	JE-LIGNOCELLULOSIC-Nanomaterials
20:30 h	PhD Networking Party					

	Room B3	Room B4	Room C1	Room C2	Room C3	Room C4	Room C5
08:30 - 10:00 h	TOPIC 2 1 Thermo dynamics-Theory-Simulation	TOPIC 7.1-Resources Use & Sustainable Technologies 1	JE-ESCAPE27 T2.- Synthesis and Design	JE-ESCAPE27 T7.- CAPE Applications Addressing Global Grand Challenges	JE-ESCAPE27 T4.- Process Monitoring and Control	Workshop - Wiley Author & Editor Exchange	TOPIC 5.2 Nanomaterials Preparation & Applications 1
10:00 - 11:00 h	PLENARY (Main Auditorium) Miguel Pardinas. Depuy CEO, Técnicas Reunidas, Spain "Engineering strategies for a growing world: TR experience"						
11:00 - 11:30 h	COFFEE - POSTERS						
11:30 - 13:00 h	TOPIC 2 1 Thermo dynamics-Applications	TOPIC 7.1-Resources Use & Sustainable Technologies 2	JE-ESCAPE27 T1.- Modeling and Simulation	JE-ESCAPE27 T6.- Concepts, Methods and Tools	TOPIC 5.5-Advanced Measurements and Characterization in FPD	SCEJ-ECAB - Next Generation Downstream Processing of Biologics	TOPIC 5.2 Nanomaterials Preparation & Applications 2
13:00 - 14:30 h	LUNCH						
14:30 - 15:30 h	PLENARY (Main Auditorium) Molly Stevens.		PLENARY ESCAPE Robin Smith: "Process Integration: Current Status and Future Challenges" Manchester University, Manchester, UK	PLENARY (Main Auditorium) Molly Stevens. Department of Bioengineering, Imperial College London, UK "Bio-responsive Hybrid Materials for Regenerative Medicine and Biosensing"			
15:30- 16:00 h	COFFEE - POSTERS						
16:00 - 17:30 h	JE-Energy Storage 1	TOPIC 7.1-Resources Use & Sustainable Technologies 3	JE-ESCAPE27 T2.- Synthesis and Design	JE-ESCAPE27 T1.- Modeling and Simulation	JE-ESCAPE27 T8.- CAPE/PSE Education/ Training	JE-ESCAPE27 T6.- Concepts, Methods and Tools	TOPIC 5.5-Modelling in Product Design of Food Products
17:30 - 19:00 h	TOPIC 2.1 Thermody-namics	TOPIC 7.1-Resources Use & Sustainable Technologies 4					TOPIC 5 Products & Materials
20:30 h	PhD Networking Party						

	Room C6	Room C7	Room C8	Room D1	Room D2	Room D3
08:30 - 10:00 h	ICOSSE 3-Sustainable technologies 1	JE- Process Safety-Cases Studies & Lessons Learnt 7	TOPIC 7.6-Clean Energy Processes & New Energy Vectors 4	JE-ESCAPE27 T1.- Modeling and Simulation	JE-ESCAPE27 T6.- Concepts, Methods and Tools	TOPIC 5.1 Fundamentals
10:00 - 11:00 h	PLENARY (Main Auditorium) Miguel Pardinas. Depuy CEO, Técnicas Reunidas, Spain "Engineering strategies for a growing world: TR experience"					
11:00 - 11:30 h	COFFEE - POSTERS					
11:30 - 13:00 h	ICOSSE 4-Sustainable technologies 2	JE- Process Safety-Cases Studies & Lessons Learnt 8	TOPIC 7.3 Water Management & Treatments 4	PhD Workshop Launching a Spin-off Round Table	TOPIC 3 Microreactors 1	TOPIC 5.1 Modelling & Eng.
13:00 - 14:30 h	LUNCH					
14:30 - 15:30 h	PLENARY ICOSSE Climate Change Science, the Paris Agreement and the Sustainable Development Goals R. Christ	PLENARY (Main Auditorium) Molly Stevens. Department of Bioengineering, Imperial College London, UK "Bio-responsive hybrid materials for regenerative medicine and biosensing"				
15:30- 16:00 h	COFFEE - POSTERS					
16:00 - 17:30 h	ICOSSE-Rapid Fire/ Lightning Round Session	JE-AOPs-Fenton Processes	TOPIC 7.3 Water Management & Treatments 5	Trends and Challenges in CE Education S. Engell & N. Kockmann, Technical University of Dortmund I. Grossmann, Carnegie Mellon University R. van Grieken, Universidad Rey Juan Carlos, Madrid Eva Sorensen, University College, London O. de Queiroz F. Araujo, Universidad Federal Rio de Janeiro J. Zhao, Tsinghua University, China J. Woo Lee, KAIST, Korea	JE-ESCAPE27 T5.- Integrated/ Holistic Approaches	TOPIC 5.4 Membranes in Gaseous Media
17:30 - 19:00 h	JE-PARMAT Nanoparticle Technology	JE-AOPs-Ozone and Catalytic Processes	TOPIC 7.3 Water Management & Treatments 6	Trends and Challenges in CE Research A. Varma, Purdue University T. Mountziaris, NSF G. Marin, Ghent University, Belgium D. Khakhar, IIT-Bombay W.K. Yuan and X.G. Zhou, East China University of Science and Technology (ECUST)		TOPIC 5.4 Membrane Eng.
20:30 h	PhD Networking Party					

TUESDAY 3rd OCTOBER

	Room D4	Room D5	Room D6	Room D7	Room E1 (1st floor)	Room E8
08:30 - 10:00 h	TOPIC 2 Intensification	JE-PARMAT-Fluidization	TOPIC 1-Curriculum Development and Transformation	JE-AOPs-Heterogeneous Photocatalysis		An introduction to AceForm4.0 – A unique opportunity to influence EU funding for Innovation across the Formulating Industries
10:00 - 11:00 h	PLENARY (Main Auditorium) Miguel Pardinas. Depuy CEO, Técnicas Reunidas, Spain "Engineering strategies for a growing world: TR experience"					
11:00 - 11:30 h	COFFEE - POSTERS					
11:30 - 13:00 h	TOPIC 2 Extraction	JE-PARMAT-Flow of Particulate Systems	TOPIC 1- Curriculum Development & e-Learning	JE-ESCAPE27 T5.- Integrated/ Holistic Approaches		An introduction to AceForm4.0 – A unique opportunity to influence EU funding for Innovation across the Formulating Industries
13:00 - 14:30 h	LUNCH					
14:30 - 15:30 h	PLENARY (Main Auditorium) Molly Stevens. Department of Bioengineering, Imperial College London, UK "Bio-responsive hybrid materials for regenerative medicine and biosensing"					
15:30- 16:00 h	COFFEE - POSTERS					
16:00 - 17:30 h	TOPIC 2 Bio-separation 1	JE-PARMAT Processes of Particulate Systems 1	TOPIC 1-Teaching Safety and Sustainability	JE-Electrochemical-Round Table Water	JE- Process Safety-Cases Studies & Lessons Learnt 8	Workshop "Formulation Scale-up & Industry 4.0" AceForm4.0 1st part: Talks
17:30 - 19:00 h	TOPIC 2 Bio-separation 2	JE-PARMAT Processes Of Particulate Systems 2	TOPIC 1-Curriculum Development	JE-Electrochemical-Round Table Industrial Electrochemistry	JE- Process Safety-Miscellaneous	Workshop "Formulation Scale-up & Industry 4.0" AceForm4.0 2nd part: Group Brainstorming and Networking
20:30 h	PhD Networking Party					

WEDNESDAY 4th OCTOBER

	Room A2	Room A3	Room A4	Room A5	Room B1	Room B2
08:30 - 10:00 h	TOPIC 6.2 Health Biotech. 1	TOPIC 3 Kinetics & Catalysis 8	JE-Energy Storage 2	TOPIC 7.1-Resources Use & Sustainable Technologies 5	TOPIC 6.4 M3C 1	JE-NC-Nanocellulose Applications
10:00 - 11:00 h	PLENARY (Main Auditorium) Philippe A.Tanguy. Vice President R&D Partnerships Total, France "Solving Global Energy Issues"					
11:00 - 11:30 h	COFFEE - POSTERS					
11:30 - 13:00 h	TOPIC 6.2 Health Biotech. 2	TOPIC 3 Kinetics & Catalysis 9	JE-Energy Storage 3	TOPIC 7.1-Resources Use & Sustainable Technologies 6	TOPIC 6.4 M3C 2	JE-NC-Aerogels/ Hydrogels and Nanocrystals
13:00 - 14:30 h	LUNCH					
14:30 - 15:30 h	PLENARY (Main Auditorium) P.V. Dankwerts Memorial Lecture. Rakesh Agrawal Winthrop E. Stone Distinguished Professor in the School of Chemical Engineering at Purdue University, USA. "Challenges and Opportunities for Chemical Engineering in an Emerging Solar Economy"					
15:30 - 16:00 h	COFFEE - POSTERS					
16:00 - 17:30 h	TOPIC 6.3 Env. Biotech. 1	TOPIC 3 Kinetics & Catalysis 10	JE-Energy Storage 4	PhD Workshop International Mobility	TOPIC 6.6 Microalgae Biotech. 1	JE-NC-Production and Application of Cellulose Nanofibers
17:30 h	Cheese& Wine Reception around the Posters					
20:30h	GALA DINNER at Marqués de Comillas Hall, (Barcelona Maritim Museum)					

WEDNESDAY 4th OCTOBER

	Room B3	Room B4	Room C1	Room C2	Room C3
08:30 - 10:00 h	JE-AOPs-Novel Materials and Nanoparticles for AOPs Applications	TOPIC 7.4 &7.5 Soil Remediation & Wastes 1		JE-ESCAPE27 T1.- Modeling and Simulation	JE-ESCAPE27 T4.- Process Monitoring and Control
10:00 - 11:00 h	PLENARY (Main Auditorium) Philippe A.Tanguy. Vice President R&D Partnerships Total, France "Solving Global Energy Issues"				
11:00 - 11:30 h	COFFEE - POSTERS				
11:30 - 13:00 h	JE-AOPs-Degradation of Priority and Emerging Pollutants	TOPIC 7.4 &7.5 Soil Remediation & Wastes 2	Roundtable-Chemical engineering in energy and energy in chemical engineering, challenges and opportunities	JE-ESCAPE27 T1.- Modeling and Simulation	JE-ESCAPE27 T4.- Process Monitoring and Control
13:00 - 14:30 h	LUNCH				
14:30 - 15:30 h	PLENARY (Main Auditorium) P.V. Dankwerts Memorial Lecture. Rakesh Agrawal Winthrop E. Stone Distinguished Professor in the School of Chemical Engineering at Purdue University, USA. "Challenges and Opportunities for Chemical Engineering in an Emerging Solar Economy"		PLENARY ICOSSE Circular Cities - The Case of the Amsterdam Metropolitan Area J.Cramer	PLENARY (Main Auditorium)	
15:30 - 16:00 h	COFFEE - POSTERS				
16:00 - 17:30 h	JE-AOPs-Novel Reactor Configurations and Full Scale Applications	TOPIC 7.4 &7.5 Soil Remediation & Wastes 3		JE-ESCAPE27 T1.- Modeling and Simulation	JE-ESCAPE27 T3.- Planning and Scheduling
17:30 h	Cheese& Wine Reception around the Posters				
20:30h	GALA DINNER at Marqués de Comillas Hall, (Barcelona Maritim Museum)				

	Room C4	Room C5	Room C6	Room C7	Room C8	Room D1	Room D2
08:30 - 10:00 h	JE-ESCAPE27 T3.- Planning and Scheduling	JE-ESCAPE27 T2.- Synthesis and Design	JE-IPIC-Modelling and Control of Intensified Processes	TOPIC 3 Multiphase Flow & Reactors 1	TOPIC 7.7-Capture, Storage & Use of CO2 1	JE-CFD Use of CFD to Improve Chemical Processes 4	JE-ESCAPE27 T7.- CAPE Applications Addressing Global Grand Challenges
10:00 - 11:00 h	PLENARY (Main Auditorium) Philippe A.Tanguy. Vice President R&D Partnerships Total, France "Solving Global Energy Issues"						
11:00 - 11:30 h	COFFEE - POSTERS						
11:30 - 13:00 h	JE-ESCAPE27 T8.- CAPE/PSE Education/ Training EURECHA-SCP	JE-ESCAPE27 T2.- Synthesis and Design	JE-IPIC Batch to Continuous 3	TOPIC 3 Multiphase Flow & Reactors 2	TOPIC 7.7-Capture, Storage & Use of CO2 2	JE-CFD Use of CFD to Improve Chemical Processes 5	JE-ESCAPE27 T7.- CAPE Applications Addressing Global Grand Challenges
13:00 - 14:30 h	LUNCH						
14:30 - 15:30 h	PLENARY (Main Auditorium) P.V. Dankwerts Memorial Lecture. Rakesh Agrawal Winthrop E. Stone Distinguished Professor in the School of Chemical Engineering at Purdue University, USA. "Challenges and Opportunities for Chemical Engineering in an Emerging Solar Economy"						
15:30 - 16:00 h	COFFEE - POSTERS						
16:00 - 17:30 h	JE-ESCAPE27 T6.- Concepts, Methods and Tools	JE-ESCAPE27 T2.- Synthesis and Design	JE-IPIC-Modular Process	TOPIC 3 Multiphase Flow & Reactors 3	TOPIC 7.7-Capture, Storage & Use of CO2 3	JE-CFD Use of CFD to Improve Chemical Processes 6	JE-ESCAPE27 T7.- CAPE Applications Addressing Global Grand Challenges
17:30-18:00 h	Cheese& Wine Reception around the Posters						
20:30h	GALA DINNER at Marqués de Comillas Hall, (Barcelona Maritim Museum)						

	Room D3	Room D4	Room D5	Room D6	Room D7	Room E7
08:30 - 10:00 h	TOPIC 5.3 Polymer & Composites 1	TOPIC 2 Membranes	JE-PARMAT-Characterization of Particulate Material	ICOSSE 5 - Bringing sustainability to the mainstream 1	JE-Electrochemical-Round Table Energy	
10:00 - 11:00 h	PLENARY (Main Auditorium) Philippe A.Tanguy. Vice President R&D Partnerships Total, France "Solving Global Energy Issues"					
11:00 - 11:30 h	COFFEE - POSTERS					
11:30 - 13:00 h	TOPIC 5.3 Polymer & Composites 2	TOPIC 2 Adsorption	JE-PARMAT Mechanics of Particulate Materials	ICOSSE 6 - Bringing sustainability to the mainstream 2	JE-Electrochemical-Round Table Waste & Wastewater	Workshop TOP-REF Outcomes: Indicators, Methodology, Tools and Standard for resources and process optimization
13:00 - 14:30 h	LUNCH					
14:30 - 15:30 h	PLENARY (Main Auditorium) P.V. Dankwerts Memorial Lecture. Rakesh Agrawal Winthrop E. Stone Distinguished Professor in the School of Chemical Engineering at Purdue University, USA. "Challenges and Opportunities for Chemical Engineering in an Emerging Solar Economy"					
15:30 - 16:00 h	COFFEE - POSTERS					
16:00 - 17:30 h	TOPIC 5.3 Polymer & Composite 3	TOPIC 2 Separation 2	JE-PARMAT Biomass Handling & Processing	ICOSSE 7 - Bringing sustainability to the mainstream 3	JE-Electrochemical-Round Table Sustainability	
17:30-18:00 h	Cheese& Wine Reception around the Posters			Awards & Closing Remarks	Cheese& Wine Reception around the Posters	
20:30h	GALA DINNER at Marqués de Comillas Hall, (Barcelona Maritim Museum)					

	Room A2	Room A3	Room A4	Room A5	Room B1
08:30 - 10:00 h	TOPIC 6.3 Env. Biotech. 2	TOPIC 6.4 M3C 3	TOPIC 3 High Pressure -Technology & Processes 1	TOPIC 3 Microreactors 3	TOPIC 6.6 Microalgae Biotech. 2
10:00 - 11:00 h	PLENARY (Main Auditorium) Peter Schuhmacher. President, Process Research & Chemical Engineering, BASF, Germany. "Process Research in the Chemical Industry"				
11:00 - 11:30 h	COFFEE - POSTERS				
11:30 - 13:00 h		TOPIC 6.4 M3C 4	TOPIC 3 High Pressure Technology & Processes 2	TOPIC 3 Microreactors 2	TOPIC 6.6 Microalgae Biotech.3
13:00 - 14:30 h	LUNCH				
14:30 - 15:30 h	PLENARY (Main Auditorium) James (Jim) R. Fitterling. Chief Operating Officer for the Materials Science Division of DowDuPont. USA				
15:30- 17:30h	CLOSING CEREMONY & AWARDS (Main Auditorium)				

	Room B2	Room B4	Room C2	Room C3
08:30 - 10:00 h	JE-FIBRE SUSPENSIONS 1	JE-ESCAPE27 T6.- Concepts, Methods and Tools	JE-ESCAPE27 T1.- Modeling and Simulation	JE-ESCAPE27 T4.- Process Monitoring and Control
10:00 - 11:00 h	PLENARY (Main Auditorium) Peter Schuhmacher. President, Process Research & Chemical Engineering, BASF, Germany. "Process Research in the Chemical Industry"			
11:00 - 11:30 h	COFFEE - POSTERS			
11:30 - 13:00 h	JE-FIBRE SUSPENSIONS 2		JE-ESCAPE27 T1.- Modeling and Simulation	JE-ESCAPE27 T3.- Planning and Scheduling
13:00 - 14:30 h	LUNCH			
14:30 - 15:30 h	PLENARY (Main Auditorium) James (Jim) R. Fitterling. Chief Operating Officer for the Materials Science Division of DowDuPont. USA			
15:30- 17:30h	CLOSING CEREMONY & AWARDS (Main Auditorium)			

	Room C4	Room C5	Room C6	Room C7	Room C8	Room D1
08:30 - 10:00 h	JE-ESCAPE27 T5.- Integrated/ Holistic Approaches	JE-ESCAPE27 T2.- Synthesis and Design	JE-IPIC-Scale-up & Industrial Implementation of Intensified Technologies 1	TOPIC 7.7- Capture, Storage & Use of CO2 4	TOPIC 7.4 & 7.5 Soil Remediation & Wastes 4	JE-CFD Use of CFD to Improve Chemical Processes 7
10:00 - 11:00 h	PLENARY (Main Auditorium) Peter Schuhmacher. President, Process Research & Chemical Engineering, BASF, Germany. "Process Research in the Chemical Industry"					
11:00 - 11:30 h	COFFEE - POSTERS					
11:30 - 13:00 h	JE-ESCAPE27 T5.- Integrated/ Holistic approaches	JE-ESCAPE27 T2.- Synthesis and Design	JE-IPIC-Scale-up & Industrial Implementation of Intensified Technologies 2	TOPIC 7.7- Capture, Storage & Use of CO2 5	TOPIC 7.4 & 7.5 Soil Remediation & Wastes 5	JE-CFD Use of CFD to Improve Chemical Processes 8
13:00 - 14:30 h	LUNCH					
14:30 - 15:30 h	PLENARY (Main Auditorium) James (Jim) R. Fitterling. Chief Operating Officer for the Materials Science Division of DowDuPont. USA					
15:30- 17:30h	CLOSING CEREMONY & AWARDS (Main Auditorium)					

	Room D2	Room D3	Room D4	Room D5	Room D6	Room D7
08:30 - 10:00 h	JE-ESCAPE27 T7.- CAPE Applications Addressing Global Grand Challenges	TOPIC 5.5-Process Driven Product Design of Food Products	TOPIC 2 Separation 3	JE-PARMAT-Agglomeration	TOPIC 7.3 Water Management & Treatments 7	JE-Electrochemical-Round Table Photoelectrochemical & Soil
10:00 - 11:00 h	PLENARY (Main Auditorium) Peter Schuhmacher. President, Process Research & Chemical Engineering, BASF, Germany. "Process Research in the Chemical Industry"					
11:00 - 11:30 h	COFFEE - POSTERS					
11:30 - 13:00 h	JE-ESCAPE27 T7.- CAPE Applications Addressing Global Grand Challenges	TOPIC 5.5-Food Specific Product Design	TOPIC 2 Separation 4	JE-PARMAT-Numerical Modelling	TOPIC 7.3 Water Management & Treatments 8	JE-Electrochemical-Round Table Fundamental Electrochemistry
13:00 - 14:30 h	LUNCH					
14:30 - 15:30 h	PLENARY (Main Auditorium) James (Jim) R. Fitterling. Chief Operating Officer for the Materials Science Division of DowDuPont. USA					
15:30- 17:30h	CLOSING CEREMONY & AWARDS (Main Auditorium)					

THE CANADIAN JOURNAL OF CHEMICAL ENGINEERING

wileyonlinelibrary.com

INCREASE YOUR INTERNATIONAL INFLUENCE

Submit your papers to Can. J. Chem. Eng.

Thematic areas

- Biotechnology, Biochemical + Biomedical Engineering
- Environment, Renewable Resources + Green Processes
- Industrial Applications of Chemical Engineering Principles
- Interfacial + Electrochemical Phenomena
- New Materials, Nanomaterials + Nanotechnology
- Process Control, Systems Engineering + Statistics
- Reaction Engineering, Chemical Kinetics + Catalysis
- Separation Processes
- Transport Phenomena, Fluid Dynamics + Thermodynamics

Visit https://mc.manuscriptcentral.com/cjce to submit today!

Did you know that CSChE members have lower subscription fees?

Email info@cheminst.ca for details.

João B.P. Soares, FCIC
Editor-in-Chief

Can. J. Chem. Eng. is published by John Wiley & Sons, Inc. on behalf of the Canadian Society for Chemical Engineering | ***For Our Future***

ANQUE-ICCE 2019

3rd International Congress of Chemical Engineering

www.anque.es/congresos/

Santander,
SPAIN
June 2019

ANQUE
ASOCIACIÓN NACIONAL DE QUÍMICOS DE ESPAÑA

AQUIQÁN
ANQUE

15:00h	Registration Opens
17:00 - 19:00h	WCCE10 Welcome Address and Cocktail (Main Hall of the Congress Venue).

09:00-10:00h	**Opening and Awards Ceremony**

	Main Auditorium
10:00 -11:00 h	PLENARY LECTURE: **Ignacio E. Grossmann** Department of Chemical Engineering Center for Advanced Process Decision Making. Carnegie Mellon University,Pittsburgh, USA **"Evolution of Process Systems Engineering and Future Trends in Research"**

11:00-11:30h **Coffee and posters**

	ROOM A2	**ROOM A3**	**ROOM A4**
11:30 – 13:00h	TOPIC 6.1 Biomass Pretreatment Chairs: V. Santos, F. Valero	JE- Process Safety-Education Chair: P.Knijff	JE- SPOUTED BED Fundamentals Chairs: Grace, Freitas
	OC- OC-83601 **Conceptual design, simulation and economic evaluation of a pretreatment step of lignocellulosic biomass using low-cost ionic liquids.** MT. Mota-Martinez, R. Outón-Gil, F. Llovell, JP. Hallett, N. Mac Dowell	**KN – 68646** **Transitioning Process Safety Knowledge: Managing Change for New Generation Chemical Engineers** S. Kadri United States of America	**KN – 96786** **50 years of Spouting at the University of British Columbia** N. Epstein, J. Lim, P. Watkinson, T. Bi Canada
	OC – 89461 Molasses as bioprocess raw material after being treated by hydrolysis to reduce heavy metals content E. Acosta-Piantini, M. Villarán, J. Lombraña Spain	**OC – 48921 Promoting safety teaching : an essential requirement for the chemical engineering education in France.** A. Laurent, L. Perrin, N. Gabas France	**OC – 75756 Prediction of Heat Transfer Rate in Gas-Solid Spouted Bed Using Pressure Fluctuation Analysis** P. Mollick, P. Goswami, D. Srivastava, P. Vijayan, A. Pandit India
	OC – 87511 Multiscale approach for understanding the deconstruction of destarched wheat bran by an industrial enzyme cocktail M. Deshors, X. Cameleyre, O. Guais, L. Fillaudeau, J. François France	**OC – 86656 Development of Chemical process safety competency in Mitsubishi Chemical Group** M. Nakagawa Japan	**OC – 33331 Surface-to-Bed Heat Transfer in Conical Spout-Fluid Beds with High Density Particles** O. Yaman, M. Köksal, G. Külah Turkey
	OC-94261 **Activation of intrinsic enzymes for degradation of plant biomass side-streams** M.Müller, E. Geiser, N. Wierckx, K.Schipper, Lars Blank, M.Feldbrügge, J.Büchs	**OC – 30371 High-tech-high-hazard safety as a mature (post) academic course** P. Swuste, G. Reniers, H. Pasman, N. Khakzad United States of America	**SOC – 74676 Bed-to-surface heat transfer in a tapered fluidized bed of biomass particles with pulsed gas flow** D. Jia, X. Bi, C. Lim, S. Sokhansanj, A. Tsutsumi Canada
	OC – 62061 Influence of the pretreatment stage in the biomethane production from different lignocellulosic residues: A techno-economic and environmental assessment D. Parra, J. Solarte, Y. Chacón, C. Cardona Colombia	**OC - 25116 Manufacturing Leader Process Safety Certification** J. Costa Sala Germany	**SOC – 81001 Minimum spouting velocities of slot-rectangular spouted beds** Z. Chen, J. Lim, J. Grace Canada

	ROOM A2 (Cont.)	ROOM A3 (Cont.)	ROOM A4 (Cont.)
11:30 – 13:00h	TOPIC 6.1 Biomass Pretreatment Chairs: V. Santos, F. Valero	JE- Process Safety-Education Chair: P.Knijff	JE- SPOUTED BED Fundamentals Chairs: Grace, Freitas
			SOC – 58051 An advanced evaluation of the new mechanistic scale-up methodology of gas-solid spouted beds using gamma-ray computed tomography (CT) and radioactive particle tracking (RPT) N. Ali, T. Aljuwaya, M. Al-Dahhana United States of America
			SOC – 60506 Cycle time distribution in sawdust conical spouted beds J. Saldarriaga, A. Atxutegi, R. Aguado, H. Altzibar, M. Olazar Colombia
			SOC – 51401 Effects of particle density and gas inlet diameter on particle velocity, solids hold-up and flux distributions in conical spouted beds with high density particles S. Golshan, A. Yeniceri, R. Zarghami, N. Mostoufi, M. Koksal, G. Kulah Iran
			SOC – 48941 Stability and residence time distribution of the solid phase in a dual multiple stage spouted bed unit M. Curti, G. Rovero, M. Giansetti, G. Actis Grande Italy

	ROOM A5	ROOM B1	ROOM B2
11:30 – 13:00h	JE-IPIC-SPIRE Session Chair: Stefanidis	TOPIC 5.2 Nanocarbons & Nanocomposites Chair: Cordero	JE- Lignocellulosic. Biorefineries Chairs: Ramos, Velasquez
	OC-98011 Energy-efficient methane valorization in microwave-assisted catalytic reactors I. Julian, H. Ramirez, B. García-Banos, J. Hueso, R. Mallada, J. Santamaría Spain	**OC – 68906 Biocatalytic Activity of Cytochrome C Immobilized on Carbon Xerogels with Customized Porosity** L. Ramírez-Montoya, A. Concheso, I. D. Alonso-Buenaposada, H. García, J. Menéndez, A. Arenillas, M. Montes-Morán Spain	**KN – 92361 Eco-friendly and cost-effective production of cellulosic fibers with new functionalities and applications** L. Christopher, M. Alam Canada
	OC-44656 Catalyst performance enhancement using nanosecond pulse discharge treatment E. Delikonstantis, M.Scapinello, G.D. Stefanidis	**OC – 84891 Evaluation of using different oxidants and conditions during graphene nanomaterials production via Modified Hummers Method** C. Bezerra de Araujo, R. Assis Barbosa, M. Gomes Ghislandi, M. Alves da Motta Sobrinho Brazil	**OC – 23286 How the operational conditions influence in the physico-chemical properties of the lignin?** A. Rodríguez Pascual, J. Domínguez-Robles, R. Sánchez, E. Espinosa, P. Díaz, null Caballero, M. García-Domínguez Spain
	OC- 97926 An overview of different technologies for c2h4 production: naphtha cracking and oxidative coupling of methane integrated with membranes and membrane reactors J. Medrano, V. Spallina, F. Gallucci , M. van Sint Annaland Netherlands	**OC – 83656 Nanocarbon and Metal Composite Materials Rational Design for Lithium-Sulfur Battery Cathode: Li- or S-Binding?** X. Chen, T. Hou, H. Peng, Q. Zhang China PR	**OC – 85276 Flexural strength of mechanical wood fiber reinforced bio-based polyamide 11 composites and its comparison with glass fiber reinforced polypropylene composites** H. Oliver-Ortega, F. Espinach, J. Claramunt, F. Julian, J. Méndez, P. Mutjé, M. Ardanuy Spain
	OC-33866 A Novel Catalytic Membrane Reactor Configuration For The Oxidative Coupling Of Methane: Reactor Modeling And Design A. Cruellas, F.gallucci, M.van Sint Annaland	**OC – 26246 Synthesis of Graphene on Stainless Steel Foams by Catalytic Decomposition of Methane** F. Cazaña, P. Tarifa, N. Latorre, V. Sebastián, E. Romeo, C. Royo, A. Monzón Spain	**OC – 84031 Ligno-cellulosic biomass stock survey in Uruguay** A. Torres, C. Philippi, R. Kreimerman, P. Ures, S. Gutiérrez Uruguay
	OC-94261 Activation of intrinsic enzymes for degradation of plant biomass side-streams M.Müller, E.Geiser, N.Wierckx, K.Schipper, L.Blank, M.Feldbrügge, J.Büchs	**OC – 47041 Graphite oxide synthesis using new oxidizing agents** A. Patón Carrero, A. Romero Izquierdo, J. Valverde Palomino, M. Lavín López2 Spain	**SOC – 22616 New pilot plant for hemicellulose extraction with hot pressurized water** G. Gallina, P. Biasi, J. Garcia Serna, M. Cocero Alonso1 Spain

	ROOM A5 (Cont.)	ROOM B1 (Cont.)	ROOM B2 (Cont.)
11:30 – 13:00h	JE-IPIC-SPIRE Session Chair: Stefanidis	TOPIC 5.2 Nanocarbons & Nanocomposites Chair: Cordero	JE- Lignocellulosic. Biorefineries Chairs: Ramos, Velasquez
	OC- 97956 Computational fluid dynamics based design of a novel reactor technology for the oxidative coupling of methane L. Vandewalle, M. Saeys, P. Perrault, C. Goel, K. Van Geem, G. Marin Belgium	**OC – 82921 Stability of polyoxometalates based nanoarchitectures in electrolyte solutions** G. De Luca, R. Amuso, A. Figoli, F. Galiano, M. Carraro, M. Bonchio, R. Mancuso, B. Gabriele Italy	**SOC – 23356 Isolation and characterization of lignocellulose nanofibers from different wheat straw pulps** E. Eduardo, R. Sánchez, J. Domínguez-Robles, A. Rodríguez Spain
		OC-83156 Chemical Engineering in Bacterial Cellulose and Composites Synthesis and Utilizations T.Dobre, A.Stoica, M.Stroescu	**SOC – 61991 Spent liquor reuse strategy applied to levulinic acid production** N. Clauser, M. Vallejos, S. Gutiérrez Parodi Uruguay

	ROOM B3	ROOM B4	ROOM C1
11:30 – 13:00h	JE - Industrial Use of Thermodynamics Chairs: Economou, Peters	JE-ESCAPE27 T3. Planning and Scheduling Chairs: Prof. Ana Barbosa-Povoa and Prof. Fengqi You	JE- ESCAPE27 T2. Synthesis and Design Chairs: Prof. Valentin Plesu and Prof. Edwin Zondervan
	KN – 88736 **DIPPR 801 Database: Processes, Practices, and Benefits of Critical Data Evaluation** V. Wilding, T. Knotts, R. Rowley, N. Giles United States of America	11:50 Continuous-Time Heuristic Model for Medium-Term Capacity Planning of a Multi-Suite, Multi-Product Biopharmaceutical Facility 1303 **Karolis Jankauskas, Lazaros G. Papageorgiou and Suzanne S. Farid**	11:50 New Method and Software for Computer-Aided Flowsheet Design and Analysis 649 **Anjan K. Tula, Rafiqul Gani and Mario R. Eden**
	OC – 87221 Benefits of the Margules Uncertainty Analysis Method P. Mathias United States of America	12:20 Rolling Horizon Condition-based Planning of Production and Utility Systems in Process Industries 1333 **Nur I. Zulkafli and Georgios M. Kopanos**	12:20 **T7.- CAPE applications addressing Global Grand Challenges** Challenges and Potentials of Modelling Tools Total Site Integration and Utility System Optimisation 2545 **Petar Sabev Varbanov, Jiří Jaromír Klemeš and Ferenc Friedler**
	OC – 38051 Breaking a traditional pattern in uncertainty evaluation for experimental data A. Bazyleva, E. Paulechka, V. Diky, K. Kroenlein United States of America		

	ROOM B3 (Cont.)	ROOM B4 (Cont.)	ROOM C1 (Cont.)
11:30 – 13:00h	JE - Industrial Use of Thermodynamics Chairs: Economou, Peters	JE-ESCAPE27 T3. Planning and Scheduling Chairs: Prof. Ana Barbosa-Povoa and Prof. Fengqi You	JE- ESCAPE27 T2. Synthesis and Design Chairs: Prof. Valentin Plesu and Prof. Edwin Zondervan
	OC – 20591 COSMO-RS theory for thermodynamic equilibrium properties: quality assessment, current status, and recent developments F. Eckert, A. Klamt, Germany		
	OC-56516 Modelling the membrane formation dynamics using the phase field model, a way for controlling the membrane morphology H. Manzanarez, J.P. Mericq, P. Guenoun, D. Bouyer		
	OC-57921 Morphogenesis of micro-structured polystyrene foams with various morphologies formed by thermally induced phase separation J.Kosek, A. Nistor, M. Vonka, A.Rygl M. Voclova , M. Minichova		
	SOC – 30576 Investigation of interfacial properties in multiphase carbon dioxide + oil/natural gas + water systems using the DGT + soft-SAFT approach L. Pereira, F. Llovell, J. Torné, L. Vega United Arab Emirates		

	ROOM C2
11:30 – 13:00h	Topic 2- Separation 1 Chairs: V. Alopaeus, A. Gorak
	OC-65061 A General Approach to Vapor-Liquid Mass Transfer Operations With Parallel Streams A. Meirelles L. Biasi, F.Batista, E.Batista, Brazil
	OC- 47736 Determination of particle drift in electrostatic precipitators using PIV, Sören, C. Roloff, O. Von Guericke, D.Thévenin ,O. Von Guericke, U. Fritsching
	OC-81436 High-performance hydroxyl-functionalized polyimides for enhanced membrane-based natural gas separation N. Alaslai, B.Ghanem , F.Alghunaimi , I. Pinnau
	OC-90026 Scaling up Analysis for Essential oil Extraction from Orange Peel , M.A. Cardenas Malaga, E.A. Medina Lezama
	OC-61691 Adsorption of anionic polyacrylamide onto negatively charged quartz in the presence of saline solutions by molecular dynamics G. Quezada,P. Toledo, R. Rozas

	ROOM C3	ROOM C4	ROOM C5
11:30 – 13:00h	JE- Gas Hydrates 1 Chairs: Englezos, Herri	TOPIC 7.2 Air Pollution Control 1 Chairs: Marrucho, Alzueta	JE-ESCAPE27 T4.-Process monitoring and control Chairs: Prof. Cesar De Prada and Dr. Liro Harjunkoski
	KN- 24941 **An efficient SNG technology via clathrate hydrates for large scale storage of natural gas** P. Linga, A. Kumar, H. Veluswamy Singapore	**OC-88136 Photocatalytic treatment of NOx by commercial photocatalytic coatings for buildings facades** C. Martínez, S. Suárez, I. Jansson, O. Vilanova, S. Nieto, B. Sánchez Spain	11:50 IQC analysis of constrained MPC of large-scale systems 1627 **Panagiotis Petsagkourakis, William Heath and Constantinos Theodoropoulos**
	OC- 66251 Experimental Investigation on the Enhanced Precombustion CO2 Capture Using Hydrate Formation in Graphite Nanofluid Z. Zou, D. Zhong, Y. Lu, J. Yan China PR	**OC- 83886 Siloxane removal during biogas upgrading in a biotrickling filter supported with activated carbon** E. Santos Spain	12:20 Coordination of distributed MPC systems through dynamic real-time optimization with closed-loop prediction 1603 **Hao Li and Christopher L.E. Swartz**
	OC- 39406 Development of descriptive elements for continuous desalination pilot-plant by hydrate-based technology S. Seo, J. Lee Korea, South	**OC-68411 Absorption of volatile organic compounds in waste oil** M. Lhuissier, A. Kane, A. Amrane, J. Audic, A. Couvert France	
	OC- 43166 Crystal Growth of Clathrate Hydrate in the Presence of Partially Water Soluble Large Molecule Guest Substance. T. Shibata, S. Oya, R. Ohmura Japan	**OC-62631 Optimal control of dual LNT-SCR catalytic converters for high DeNOx efficiency in lean burn automobiles** U. De-La-Torre, B. Pereda-Ayo, J. González-Marcos, J. González-Velasco Spain	
	SOC- 53041 A Novel Micro-Meso Structured Mixer Applied for Gas Hydrates Production – A Potential CCS Technology M. Costa, C. Teixeira, R. Santos, M. Dias, J. Lopes Portugal	**OC-62461 Deep desulfurization of fuel oils using deep eutectic solvents and ionic liquids under mild conditions** F. Lima, A. Silvestre, L. Branco, I. Marrucho, Portugal	
	SOC- 86751 A new experimental and modelling study on non-equilibrium crystallization of mixed gas hydrates involving hydrate volume and composition S. Maghsoodloo, B. Bouillot, J. Herri France	**OC-59816 Perovskite-based formulations for NOx emission control in diesel engines** J. ONRUBIA, B. Pereda-Ayo, J. Gonzalez-Velasco Spain	

	ROOM C3 (Cont.)	ROOM C4 (Cont.)	ROOM C5 (Cont.)
11:30 – 13:00h	JE- Gas Hydrates 1 Chairs: Englezos, Herri	TOPIC 7.2 Air Pollution Control 1 Chairs: Marrucho, Alzueta	JE-ESCAPE27 T4.-Process monitoring and control Chairs: Prof. Cesar De Prada and Dr. Liro Harjunkoski
	SOC- 24961 Thermophysical Property Measurements of Ionic Semiclathrate Hydrates Formed with Tetrabutylphosphonium Salt Holding Bivalent Anion Y. Arai, Y. Yamauchi, R. Ohmura Japan		

	ROOM C6	ROOM C7	ROOM C8
11:30 – 13:00h	TOPIC 3 Kinetics & Catalysis 1 Chairs: Pavarajarn, Gruber-Woelfler	JE-Process Safety-Management 2 Chair: B. Fabiano	TOPIC 7.3 Water Management & Treatments 1 Chairs: Mohedano, Saroha Anil
	OC- 38191 Synthesis and testing of mixed magnetite/iron carbide nanocatalysts for slurry phase Fischer Tropsch reaction D. Lokhat, O. Mupomoki South Africa	**KN-55471 Optimising Procedures to Reduce Unplanned Events** P. Delanoy, W. Schram United Kingdom	**OC- 94241 Development of contaminant removal materials suitable for implementation in cold regions** J. Ma, K. Mumford, G. Stevens Australia
	OC-95966 3-Dimentional Fibre Deposition technology for catalytic applications L. Van Lent-Protasova, J. Lefevere, S. Danaci, M. Gysen, M. Mertens Belgium	**OC- 23421 Process Safety Management in Concentrated Solar Power Plants** M. Haider Saudi Arabia	**OC- 92956 Degradation and toxicity removal of Estrone and Ethinylestradiol by photo-Fenton**, Brazil
	OC-66976 Continuous production of a nanostructured fibre by floating catalyst CVD J. Vilatela, B. Alemán, V. Reguero Spain	**OC- 21326 State of the art guidance addressing the identification and control of electrostatic ignition hazards associated specific hazardous area processes and operations.** M. O'Brien United Kingdom	**OC- 89306 Development of a 3D (CFD) solver based in the drift velocity to model the activated sludge settling behavior, including hindered and compression zones.** M. Valle Medina, J. Laurent France
	OC-80791 Isotherm, Kinetic and Adsorption Study of Malachite Green Dye on Carbon Nanotubes Immobilized Biomass (CNTIB) N. Kabbashi, I. Bello, M. Alam, M. Al-Khatib Malaysia	**OC-28336 Implementing a Serious Injury and Fatality Exposure Rate in the Chemical Industry** M. Arias García Belgium	**OC- 87686 Scale-up and start-up of an industrial pilot plant treating hospital wastewaters** T. Alvarino, E. Garcia-Sanda, S. Suarez, J. Lema, F. Omil Spain

	ROOM C6 (Cont.)	ROOM C7 (Cont.)	ROOM C8 (Cont.)
11:30 – 13:00h	TOPIC 3 Kinetics & Catalysis 1 Chairs: Pavarajarn, Gruber-Woelfler	JE-Process Safety-Management 2 Chair: B. Fabiano	TOPIC 7.3 Water Management & Treatments 1 Chairs: Mohedano, Saroha Anil
	OC-92376 Flame Synthesis of Atom-dispersed PGM Catalysts on Nanostructured Ceramic Supports S. Pratsinis, K. Fujiwara Switzerland	**OC-39836 Process Safety Index - An objective, consistent method for evaluating the balance between Threats and Protection** D. Hatch United Kingdom	**OC- 87601 UV/H2O2 degradation of Psoralens** O. Tchaikovskaya, N. Bryantseva, J. Gómez Carrasco, V. Krayukhina, M. Dolores Almagro, M. Gómez Gómez Russia
	OC-73011 Heavy Oil In Situ Upgrading via Nano-Catalysts: Converting the Reservoir into a Catalytic Reactor C. Scott, L. Carbognani-Ortega, C. Hovsepian, L. Coy, P. Pereira-Almao, Q. Cui Canada		

	ROOM D1	ROOM D2	ROOM D3
11:30 – 13:00h	JE-CFD Use of CFD to Improve Chemical Processes 1 Chairs: de Bezerra Machado, Perret	TOPIC 2.3 Cristallisation 1 Chairs: Meyer, Abildskov	TOPIC 3 Chemical & Photochemical reactors 1 Chairs: Schlücker, Lemos
	KN-35471 Toward a multiscale CFD-DPD model for structured fluids H. Droghetti, I. Pagonabarraga Mora, P. Asinari, P. Carbone, D. Marchisio1 Italy	**OC- 22226 Continuous preferential crystallization of Guaifenesin** E. Temmel, A. Bartz, H. Lorenz, A. Seidel-Morgenstern2 Germany	**OC- 60671 New Advances on the Mathematical Modeling of the Continuous Bulk Process for the Production of High-Impact Polystyrene Using Multifunctional Initiators** M. Lagana, J. Maffi, E. Berkenwald, G. Morales, D. Estenoz Argentina
	OC-51591 Validation of spontaneous structure evolution with fluid-particle systems using DEM and CFD-DEM framework J. Yu, C. Wu, O. Ayeni, K. Nandakumar, J. Joshi, M. Tyagi United States of America	**OC- 78326 Multicomponent Mixture Separation via Electric-Field-Enhanced-Crystallization (EFEC)** W. Li, H. Kramer, J. ter Horst Netherlands	**OC-92361 The german initiative ENPRO – „Energy efficiency and process acceleration for the german chemical industry" as an outstanding example of inter-corporate collaboration** A. Bazzanella, L. Schulz Germany

	ROOM D1 (Cont.)	ROOM D2 (Cont.)	ROOM D3 (Cont.)
11:30 – 13:00h	JE-CFD Use of CFD to Improve Chemical Processes 1 Chairs: de Bezerra Machado, Perret	TOPIC 2.3 Cristallisation 1 Chairs: Meyer, Abildskov	TOPIC 3 Chemical & Photochemical reactors 1 Chairs: Schlücker, Lemos
	OC-52686 CFD-DEM modeling of biomass combustion on a reciprocating grate C. Galletti, N. Bitossi, S. Santilli, M. Gallo, F. Sansone, B. Peters Italy	**OC- 78451 Development of a small-scale miniplant device for the separation of crystalline amino acids** L. Löbnitz, H. Anlauf, H. Nirschl Germany	**OC-78706 Solar-driven thermochemical splitting of CO2 into separate streams of CO and O2 with a ceria redox membrane** M. Tou, R. Michalsky, A. Steinfeld Switzerland
	OC-60141 CFD model to predict coke and gas formation inside a petrochemical furnace with the use of a kinetic net for the thermal cracking D. Volpin R. Fontoura, M. Valus, R. Serfaty, J. Nunhez Brazil		**OC-78561 Reificated knowledge models for simulation and design of solar photoprocess** F. Gros, M. Roudet, J. Cornet, J. Dauchet France
	SOC-29541 Microstructure modelling of gas diffusion layer of PEM fuel cell M. Rosli, D. Fadzillah Malaysia		**OC-93816 Methane production by water sorption enhanced Sabatier reaction** I. Agirre, E. Acha, J. Cambra, V. Barrio Spain
	SOC-66941 Computational Fluid Dynamics across Scales – A case study presentation U. Krühne, C. Bach, J. Yang, M. Wu, T. Tajsolejman, K. Gernaey Denmark		**OC-78486 efficient advanced technologies for removal of contaminants of emerging concern, or significant risk substances according to EC directives** S. Malato, A. Amat, A. Arques, J. Radjenovic, W. Gernjak, I. Oller Spain
	SOC-78406 CFD-DEM Simulation of MTO Fluidized Bed Reactor: Vadilation of a Theoretical Model For Coke Distribution X. Yuan, H. Li, M. Ye, Z. Liu China PR		

	ROOM D4	ROOM D5	ROOM D6
11:30 – 13:00h	TOPIC 7.6-Clean Energy Processes & New Energy Vectors 1 Chairs: Groff, Serrano	JE-PARMAT-Dynamic Simulation of Interconnected Solids Processes Chairs: Heinrich, Fritsching	TOPIC 2 Heat & Mass transfer 1 Chair: Baldyga, Yuan
	OC-93886 Hydrogen production from bio oils. From model compounds to real bio-oils K. Bizkarra, V. Barrio, P. Arias, J. Bermudez, M. Millán, J. Cambra Spain	**OC-47686 Parallel algorithms for the solution of the population balance equation by means of weighted Monte Carlo particles** G. Kotalczyk, F. Kruis, Germany	**OC-43986 Heat transfers intensification of packings in a narrow tube** A. Zenner, D. Edouard, K. Fiaty, V. Bellière-Baca, C. Rocha, G. Gauthier France
	OC-93336 Designing Non-Precious Nanocatalysts for Fuel Cells J. Hu China PR	**OC-44676 Advanced computational methods for dynamic flowsheet simulation of interconnected solids processes** V. Skorych, M. Dosta, E. Hartge, S. Heinrich Germany	**OC-62271 Enhancement of Exothermic Absorption using a Spinning Disc Reactor** R. Mandel, R. Tiwari, M. Ohadi, S. Bangerth United States of America
	OC-90761 Co and Cu dye-sensitized-TiO2 substrates as photocatalysts for CO2 reduction to solar fuels E. Duran, J. Incer, C. Rojas, L. Pineda, Costa Rica	**OC-29966 Experimental investigations of cohesive food powders in a pilot plant scale vibrated fluidized bed dryer** S. Lehmann, E. Hartge, A. Jongsma, M. Slagter, F. Innings, S. Heinrich Germany	**OC-87791 Membrane Contactors: Process intensification due to enhancements in material science and flow simulation** W. Riedl Switzerland
	OC-80891 Production of biodiesel from recycled grease trap waste: a case study in adelaide, south australia N. Tran, C. Tran, P. Ho, T. Hall, E. Mcmurchie, Y. Ngothai Australia	**OC-87341 Accessing the stressing conditions in jet mills using particle probes** A. Strobel, B. Köninger, S. Romeis, K. Wirth, W. Peukert, Germany	**OC-89051 Numerical simulation of passive scalar transport in taylor-couette flows in small-aspect-ratio with rotating outer wall** N. Ouazib, Y. Salhi, E. Si-Ahmed, J. Legrand, A. Arhaliass France
	OC-76226 Production of biogasoline and biodiesel from waste cooking oil G. Li, J. Chen, J. Cheng, J. Chien, G. Lee, J. Chang, T. Ling, G. Wang, J. Chern Taiwan	**OC-84061 Dynamic process model for fine grinding in stirred media mills** G. Fragniere, D. Schons, C. Burmeister, C. Schilde, A. Kwade Germany	**OC-90406 Intensified extractions using small-scale contactors for energy applications** E. Garciadiego Ortega, D. Tsaoulidis, P. Angeli United Kingdom

	ROOM D4 (Cont.)	ROOM D5 (Cont.)	ROOM D6 (Cont.)
11:30 – 13:00h	TOPIC 7.6-Clean Energy Processes & New Energy Vectors 1 Chairs: Groff, Serrano	JE-PARMAT-Dynamic Simulation of Interconnected Solids Processes Chairs: Heinrich, Fritsching	TOPIC 2 Heat & Mass transfer 1 Chair: Baldyga, Yuan
	SOC- 50431 Hydrazine production by anammox biomass from NH4+ and NO S. Qiao, J. Zhou Dalian University of Technology, China PR	**OC-29936 Experimental and numerical investigation of collision dynamics of wet particles** B. Buck, Y. Tang, N. Deen, H. Kuipers, S. Heinrich Germany	**OC- 82726 Numerical-correlative prediction of heat transfer in Geldart B bubbling fluidized beds** P. Ostermeier, A. Vandersickel, M. Becker, S. Gleis, H. Spliethoff Germany
		SOC-48376 Dynamic wetting process of heterogeneous powders J. Kammerhofer, S. Heinrich, L. Fries, J. Dupas, L. Forny, S. Palzer Germany	**OC- 85176 Simultaneous PIV/LIF measurements of the effects of nitrogen on the interfacial convection during process of CO2 dissolution into water** Q. Fu, H. Zhang, N. Hu, X. Yuan, K. Yu China PR
		SOC-72701 Strategies to minimize grinding media wear during wet stirred media milling of organic products F. Flach, S. Breitung-Faes, A. Kwade Germany	

	ROOM D7
11:00 - 11:30 h	I COSSE OPEN CEREMONY
11:30 - 13:00 h	ICOSSE 1-The Transition to Sustainable Living 1 Chair: Kim Ogden and Rakesh Agarwal
	OC-65086 Manufacturing Sustainability: Multiscale Systems Science and Applied Studies Y. Huang United States of America
	OC-37301 Delivering Resource Projects Sustainably in Emerging Economies: The success story of an innovative business intervention model J. Petrie, L. Basson, M. Mulcahy (Australia)
	OC-51046 Sustainability of solar PV systems for electricity generation I. Herrera, A. Vides, Y. Lechón (Spain)

	ROOM D7 (Cont.)		
11:30 - 13:00 h	ICOSSE OPEN CEREMONY 1-The Transition to Sustainable Living 1 Chair: Kim Ogden and Rakesh Agarwal		
	OC- 64891 Towards a more sustainable management of desalination brines M. Herrero, A. Dominguez-Ramos, R. Ibañez, A. Irabien (Spain)		
	OC-80001 Total Water Sustainability Management for China & World W. Loo United States of America		
13:00 – 14:30h	LUNCH		

	Main Auditorium
14:30 – 15:30h	PLENARY LECTURE: **Jackie Y. Ying** Institute of Bioengineering and Nanotechnology, Singapore **Tackling Global Challenges with the Nanotechnology Toolbox**

	ROOM C1
14:30 - 15:30 h	PLENARY ESCAPE Chair: **Prof. Rafiqul Gani, Gintaras V. (Rex) Reklaitis**: "Prospects and Challenges for Process Systems Engineering in Healthcare. **Gintaras V. (Rex) Reklaitis,** **Burton and Kathryn,** Gedge Distinguished Professor of Chemical Engineering Davidson School ofChemical Engineering, Purdue University, West
15:30 – 16:00 h	COFFEE – POSTERS

	ROOM A2	ROOM A3	ROOM A4
16:00 – 17:30h	TOPIC 6.1 Enzyme Eng. Chairs: B. Bühler, B.Kelly	JE- Process Safety- Leadership Chair: Sam Mannan	JE- SPOUTED BED Simulation Chair: Freitas
	OC- 91061 Production of Polycaprolactone Combining Two Biocatalytic Reactions Using Supercritical Carbon Dioxide as Reaction Media D. Huserman, L. Parra, P. Robles, G. Núñez (Chile)	**KN – 68656 The future of process safety** T. Kerin Australia	**KN – 96556 Experimental and numerical investigation of a three-dimensional prismatic spouted bed with liquid injection** S. Heinrich, S. Pietsch Germany

	ROOM A2 (Cont.)	ROOM A3 (Cont.)	ROOM A4 (Cont.)
16:00 – 17:30h	TOPIC 6.1 Enzyme Eng. Chairs: B. Bühler, B.Kelly	JE- Process Safety- Leadership Chair: Sam Mannan	JE- SPOUTED BED Simulation Chair: Freitas
	OC- 82756 Novel and efficient cofactor recycling in oxidative biotransformations using immobilized fused Baeyer-Villiger monooxygenase and phosphite dehydrogenase D. Valencia, M. Guillén, J. López-Santín, G. Alvaro Spain	**OC – 65511 Leadership for the Global Process Safety in Chemical Process Industries: Facing challenges of chemical process industries in Asia** E. Yoon, D. Shin, T. Kim, C. Han Korea, South	**OC – 52356 CFD-MC Simulation of Conical Spouted Bed** R. Zarghami, S. Golshan, N. Mostoufi Iran
	OC- 40256 Cross-linked aggregates of porcine pancreatic lipase for biodiesel production M. Díaz Ramos, W. Kopp, P. Tardioli Brazil	**OC – 93286 Distributed Safety Management as a tool for creating a safety culture in university students and future professionals** J. Sempere, R. Nomen, N. Amaya, M. Rovira El Salvador	**OC – 56021 A combined spouted bed and Wurster fluidized bed apparatus for fine particles** P. Breuninger, D. Weis, S. Buhl, S. Antonyuk Germany
	OC- 24981 "Putting the bottle on the table" – Process development of chemo-biocatalytic reactions at Enzymicals P. Süss, R. Wardenga Germany	**OC – 65096 IPSHA: A Resilience-Based Approach - Corporate Layer Analysis** P. Jain, H. Pasman, W. Rogers, S. Mannan United States of America	**OC – 97836 CFD-DEM study on spouting behaviors with different particle shapes** X.Liu, W.Zhong, A.Yu
	OC- 56806 Immobilized enzymes as intensified heterogeneous biocatalysts J. Bolivar, S. Schelch, B. Nidetzky Austria	**OC – 30036 The impact of Cognitive Bias on Process Safety Outcomes** A. Trujillo, M. Arias Spain	**SOC – 21206 A general approach of simulating the spouted bed-chemical vapor deposition process in nuclear fuel particle fabrication** M. Liu China PR
	OC- 65356 Optimization of reaction-separation conditions of galactooligosaccharides (GOS) production using aqueous two-phase system (ATPS) as reaction medium G. Castro, J. Serrato Colombia		**SOC – 97856 Modeling on the hydrodynamics of full-loop circulating spouted bed** D. Chen, Z. Sun, W. Zhong, B. Jin, A. Yu China PR

	ROOM A2 (Cont.)	ROOM A3 (Cont.)	ROOM A4 (Cont.)
16:00 – 17:30h	TOPIC 6.1 Enzyme Eng. Chairs: B. Bühler, B.Kelly	JE- Process Safety- Leadership Chair: Sam Mannan	JE- SPOUTED BED Simulation Chair: Freitas
			SOC – 41271 Using an Interval Polynomial to Investigate the Stability of the Spout-Annulus Interface M. Morgan, C. Morgan, H. Littman United States of America
			SOC – 48826 Validated Simulations of the Fluid Dynamics of a Spouted Bed Reactor Employing the Discrete Element Method F. Marchelli, C. Moliner, M. Curti, G. Rovero, B. Bosio, E. Arato Italy

	ROOM A5	ROOM B1	ROOM B2
16:00 – 17:30h	JE- IPIC Batch to Continuous 1 Chair: Kida	TOPIC 5.2 Exp. Strategies along QbD Chairs: Herwig	JE- LIGNOCELLULOSIC – Integrated Biorefineries 1 Chairs: Rodriguez, Zanuttini
	KN – 61641 Intensification of Transport Phenomena using 3D Printed Fluidic Oscillators J. McDonough, R. Law, A. Harvey United Kingdom	**OC – 25916 Knowledge Transfer Workflows to facilitate Quality by Design to enter into practice** C. Herwig, Austria	**KN – 63106 Pine bark biorefinery: A source of valuable chemicals** A. Berg, N. Karna, A. Perez Chile
	"PI Excellence award"	**OC – 55811 Using high-throughput experimentation for an in-depth understanding of nanoparticle processing** D. Segets, A. Salaheldin, P. Herre, J. Walter, W. Peukert Germany	**OC – 28296 Mechanistical modelling of Xylan hydrolysis using automated data collection via high performance anion exchange chromatography** C. Cürten, N. Anders, A. Spiess Germany
	OC – 46811 Development of wall-coated biocatalytic microreactors for continuous process intensification J. Bolivar, D. Valikhani, B. Nidetzky Austria	**OC – 27291 Performance Evaluation of Graphene Oxide in Synergy with Microwave Irradiation for Cellulose Depolymerization: Effect of Structure and Particle Size** E. Mission, A. Quitain, M. Sasaki, T. Kida Japan	**OC- 26746 Molecular weight determination of lignin using gel permeation chromatography with reduced secondary separation effects** T. Jestel, A. Spiess, N. Anders, Germany

	ROOM A5 (Cont.)	ROOM B1 (Cont.)	ROOM B2 (Cont.)
16:00 – 17:30h	JE- IPIC Batch to Continuous 1 Chair: Kida	TOPIC 5.2 Exp. Strategies along QbD Chairs: Herwig	JE- LIGNOCELLULOSIC – Integrated Biorefineries 1 Chairs: Rodriguez, Zanuttini
	OC – 83341 Intensification Strategies for Solid Processing in Synthesis, Workup and Formulation by Using Continuous Manufacturing D. Kirschneck Austria	**OC – 68501 Multi-Scale Simulations Relevant for Emulsions** A. Striolo United Kingdom	**OC- 78241 The Research Activities from the Laboratory for Catalysis Engineering** J. Huang Australia
	SOC – 47531 Solid handling by flow rate swing operation in a milli-channel europium recycling photoreactor M. Leblebici, G. Meir, G. D. Stefanidis, T. Van Gerven Belgium	**OC – 27111 Efficient Carbon Dioxide Separation from Gas Flows Using Ionic Liquids Supported on Silica Microhoneycombs** S. Yoshida, K. Takahashi, S. Kudo, S. Iwamura, I. Ogino, S. Mukai Japan	**SOC- 73141 Effects of Fractionation and Mechanical Treatments of Korean OCC on Paper Properties** H. Lee, H. Youn Korea, South
	SOC – 25471 A study of the flow structures generated by oscillating flows in a helical baffled tube J. McDonough, S. Ahmed, A. Phan, A. Harvey United Kingdom	**OC – 70006 AQUAPROCESSING: Single Pass Whole Heavy Oil Feedstocks Upgrading Process** L. Carbognani Ortega, P. Pereira-Almao, M. Perez Zurita, G. Vitale Rojas, L. Coy Plaza, C. Scott, T. Righi, E. Garcia Hubner, L. Bernal Sardi Canada	**SOC- 66546 Production of Xylooligosaccharides (XOs) from biomass waste of Colombian agro-industry** R. Acosta Fernandez, C. Muvdi Nova, D. Nabarlatz Colombia
	SOC – 66376 Particle classification via Taylor-Couette flow: Experimental and Simulation Studies H. Wang, A. Phan, V. Zivkovic, K. Boodhoo United Kingdom		**SOC- 59866 Rapid microwave-irradiated catalytic conversion of non-edible lignocellulose (Sunn hemp fibres) to cellulosic biofuels** S. Paul, S. Chakraborty, India

	ROOM B3	ROOM B4	ROOM C1
16:00 – 17:30h	JE-IUT Rond table Data Quality and Assesment, Validation Methods and Error Propagation through the Simulation Software Chair: Paul M. Mathias (USA) Participants: J. Abildskov, V. Alopaeus, F. Eckert, J.W. Magee, C. Peters, Z. Wagner	16:00 – 19:00h JE-ESCAPE27 T2.Synthesis and Design Chairs: Prof. Mariano Martin and Prof. Karl Tapio Westerlund 16:30 Design and Operation of a Supply Chain Model for Electric and Plug-in Hybrid Electric Vehicles: Snapshot Model 883 **Alberto Betancourt-Torcat, Tuhin Poddar and Ali Almansoori** 16:50 Techno-economic assessment of the effects of biogas rate fluctuations on industrial applications of solid-oxide fuel cells 895 **Sonja Sechi, Sara Giarola, Andrea Lanzini, Marta Gandiglio, Gbemi Oluleye, Massimo Santarelli and Adam Hawkes** 17:10 Designing Integrated Biorefineries Supply Chain: Combining Stochastic Programming Models with Scenario Reduction Methods 901 **Helena Paulo, Teresa Cardoso-Grilo, Susana Relvas and Ana Paula Barbosa-Póvoa** 17:30 Location-dependent optimal biorefinery synthesis 907 **Maria-Ona Bertran, John M. Woodley and Rafiqul Gani**	TOPIC 6. ACS BIOT ESBES Event Students competition in Biosimilars production Prof. **Marcell Ottens** (ESBES) and Prof. **Bill Kelly** (ACS-Biot) Settings the Scene **M.H.M. Eppink** **J. Shultz**

	ROOM B3 (Cont.)	ROOM B4 (Cont.)	ROOM C1 (Cont.)
16:00 – 17:30h	JE-IUT Rond table Data Quality and Assesment, Validation Methods and Error Propagation through the Simulation Software Chair: Paul M. Mathias (USA) Participants: J. Abildskov, V. Alopaeus, F. Eckert, J.W. Magee, C. Peters, Z. Wagner	16:00 – 19:00h JE-ESCAPE27 T2.Synthesis and Design Chairs: Prof. Mariano Martin and Prof. Karl Tapio Westerlund 17:50 Food Manufacturing & Economies of Scale: A Modelling Approach 913 **Liliana Angeles Martinez, Constantinos Theodoropoulos, Estefania Lopez-Quiroga, Peter J. Fryer and Serafim Bakalis** 18:10 Dynamic Programming for Optimal Synthesis of Water Networks in Batch Processes 919 **Zhiwei Li and Thokozani Majozi** 18:30 Biobased Supply Chain Optimisation Model under Uncertainties 961 **Anna Panteli, Sara Giarola and Nilay Shah**	TOPIC 6. ACS BIOT ESBES Event Students competition in Biosimilars production Prof. **Marcell Ottens** (ESBES) and Prof. **Bill Kelly** (ACS-Biot) Settings the Scene **M.H.M. Eppink** **J. Shultz**

	ROOM C2	ROOM C3	ROOM C4
16:00 – 19:00h	JE-ESCAPE27 T7-CAPE Applications addressing Global Grand Challenges. Chairs: Dr. Petar Varbanov and Dr. Carla Pinheiro	16:00 - 17:30h JE- Gas Hydrates 2 Chairs: Linga, Ohmura	16:00 - 17:30 h TOPIC 7.2 Air Pollution Control 2 Chairs: Charry, Bilbao
	16:30 Addressing the Minimum Environmental Impacts of Algal Renewable Diesel Production from a Consequential Perspective 2605 **Jian Gong and Fengqi You**	**KN-34051** **Atomistic Modeling of the Phase Equilibrium of Gas Hydrates** I. Economou, V. Michalis, I. Tsimpanogiannis, A. Stubos Qatar	**OC-58626 Cu/BETA AND Cu/SAPO-34 NH3-SCR PERFORMANCE** M. Urrutxua, B. Pereda-Ayo, U. De La Torre, J. González-Velasco Spain

	ROOM C2 (Cont.)	ROOM C3 (Cont.)	ROOM C4 (Cont.)
16:00 – 19:00h	JE-ESCAPE27 T7-CAPE Applications addressing Global Grand Challenges. Chairs: Dr. Petar Varbanov and Dr. Carla Pinheiro	16:00 - 17:30h JE- Gas Hydrates 2 Chairs: Linga, Ohmura	16:00 - 17:30 h TOPIC 7.2 Air Pollution Control 2 Chairs: Charry, Bilbao
	16:50 Techno-Economic and Environmental Optimization of Palm-based Biorefineries in the Brazilian Context 2611 **Maziar Kermani, Ayse Dilan Celebi, Anna S. Wallerand, Adriano V. Ensinas, Ivan D. Kantor and François Maréchal**	**OC-72886 Gas Hydrate Mediated Carbon Dioxide Storage in Depleted Gas Reservoir** P. Englezos, D. Sun, M. Massah Canada	**OC-56321 AN EXPERIMENTAL STUDY OF ISOBUTANOL PYROLYSIS** E. Royo, F. Viteri, M. Alzueta, Millera, R. Bilbao Spain
	17:10 Multi-Objective Optimization of a Pressure-Temperature Swing Adsorption Process for Biogas Upgrading 2629 **Federico Capra, Matteo Gazzani, Marco Mazzotti, Maurizio Notaro and Emanuele Martelli**	**OC-32546 Kinetic modeling for clathrate hydrate formation in porous media** A. Palodkar, A. Jana India	**OC-49966 FATE OF MERCURY IN MUNICIPAL SOLID WASTE INCINERATION** M. Rumayor, K. Svoboda, J. Švehla, M. Šyc, M. Pohořelý Czech Republic
	17:30 Production of Fuels from CO2–rich Natural Gas using Fischer-Tropsch Synthesis Coupled to Tri-reforming Process 2659 **José E. A. Graciano, André D. Carreirra, Reinaldo Giudici and Rita M. B. Alves**	**OC-92001 Understanding the properties of gas hydrate slurry viscosity for an advanced hydrate management strategy** A. Abdul Majid, B. Tanner, D. Wu, Z. Aman, E. May, C. Koh United States of America	**OC-46731 Analysis of alternative catalysts for the simultaneous abatement of NOX and dioxins from MSW incineration plants** M. Gallastegi Villa, J. Martín Martín, A. Aranzabal Maiztegi, M. González Marcos, J. González Velasco (Spain)
	17:50 Optimal bio-based supply chain with carbon capture and use: an economic and environmental approach 2665 **Mar Pérez-Fortes, José Miguel Laínez-Aguirre and Luis Puigjaner**	**SOC-87231 Experimental determination and modelling of cyclopentane hydrates in the presence of NaCl, KCl, CaCl, and a mixture of NaCl-KCl** S. Ho-Van, J. Douzet, B. Bouillot, J. Herri France	**OC-45791 Removal of hydrogen sulfide in air by abiotic filtration using cellular concrete waste** M. Ben Jaber, A. Couvert, A. Amrane, P. Le Cloirec, E. Dumont France
	18:10 Application of a computer-aided framework for the design of CO2 capture and utilization processes 2653 **Rebecca Frauzem, John M. Woodley and Rafiqul Gani**	**SOC-32776 Thermodynamic Modeling of Methane+Aldehydes Hydrates** N. Thakre, A. Jana India	**OC-42826 Experimental and kinetic modelling study of H2S oxidation** J. Colom, Millera, R. Bilbao, M. Alzueta Spain

	ROOM C2 (Cont.)	ROOM C3 (Cont.)	ROOM C4 (Cont.)
16:00 – 19:00h	JE-ESCAPE27 T7-CAPE Applications addressing Global Grand Challenges. Chairs: Dr. Petar Varbanov and Dr. Carla Pinheiro	16:00 - 17:30h JE- Gas Hydrates 2 Chairs: Linga, Ohmura	16:00 - 17:30 h TOPIC 7.2 Air Pollution Control 2 Chairs: Charry, Bilbao
	18:30 On the relevance of thermodynamics to predict the behaviour of inorganics during CO2 gasification of willow wood 2671 **Marwa Said, Laurent Cassayre, Jean-Louis Dirion, Xavier Joulia and Ange Nzihou**		

	ROOM C5	ROOM C6	ROOM C7
16:00 - 19:00 h	JE-ESCAPE27 T1. - Modeling and Simulation Chairs: Prof. Flavio Manenti and Prof. Yu Qian	16:00 – 17:30h TOPIC 3 Kinetics & Catalysis 2 Chairs: Latifi, Gutierrez	16:00 – 17:30h JE- Process Safety- Cases Studies & Lessons Learnt 1 Chair: Eddy De Rademaeker
	16:30 Systematic Generation of Chemical Reactions and Reaction Networks subject to Energetic Constraints 133 **Carolina S. Vertis, José F. O. Granjo, Nuno M. C. Oliveira and Fernando P. Bernardo**	**OC-56711 Catalytic supercritical water gasification of agro-food wastes for hydrogen production** S. Nanda, A. Dalai, S. Naik, J. Kozinski Canada	**KN-42666 Learnings from Reactive Chemicals incidents at Dow** K. van Gelder, M. Lammens, S. Horsch, R. Bellair, M. Holsinger Netherlands
	16:50 A two-layer identification strategy for the development of stochastic models of the travelling traders' exchange problem 265 **Chunbing Huang, Patrick M. Piccione, Federica Cattani and Federico Galvanin**	**OC-49176 Catalytic Conversion of Carbon Dioxide into Liquid Fuel at Low Temperature** S. Hasan, W. Wan Isahak, M. Masdar, J. Md Jahim, Z. Yaacob Malaysia	**OC-67626 Uncertainty Aspect of Representative Accident Scenarios Identification in Process Hazard Analysis** D. Siuta, A. Markowski Poland

	ROOM C5 (Cont.)	ROOM C6 (Cont.)	ROOM C7 (Cont.)
16:00 - 19:00 h	JE-ESCAPE27 T1. - Modeling and Simulation Chairs: Prof. Flavio Manenti and Prof. Yu Qian	16:00 – 17:30h TOPIC 3 Kinetics & Catalysis 2 Chairs: Latifi, Gutierrez	16:00 – 17:30h JE- Process Safety- Cases Studies & Lessons Learnt 1 Chair: Eddy De Rademaeker
	17:10 Identifiability of the glyceride transesterification kinetics via alkaline catalysis 289 **José F. O. Granjo, Belmiro P. M. Duarte and Nuno M. C. Oliveira**	**OC-42476 Applicability of fluidized bed reactor for catalytic conversion of CO2 to methane** K. Matsuoka, K. Kuramoto, Z. Zhang Japan	**OC-99350 Process Safety Management in Iran, Hindsight, Insight and Foresight** F. Nourai proNEXO Engineering Consultancy
	17:30 Constrained Global Sensitivity Analysis: Sobol' indices for problems in non-rectangular domains 151 **Oleksiy V. Klymenko, Sergei Kucherenko and Nilay Shah**	**OC-69501 LIGNITE CHAR GASIFICATION USING CO2 as GASIFIER AND NiCO3 as CATALYST** H. Sulistyo, R. Rochmadi, K. Sundari Indonesia	**OC-67151 An improved management of laboratory hazards using the Assessment and Classification of Hazards in Laboratories (ACHiL) methodology** T. Meyer, A. Novello Switzerland
	17:50 Design of Optimal Experiments for Dynamic MIMO Identification 319 **Kurt-Erik Häggblom**	**OC-29401 Thermodynamic analysis of a novel intensified process for the efficient conversion of CO2 to methanol** A. Zachopoulos, E. Heracleous, Greece	**OC-76406 Integrated experimental and modelling approach for the study of the behavior of vessel exposed to fire** G. Scarponi, I. Bradley, G. Landucci, V. Cozzani, A. Birk, F. Otremba Italy
	18:10 Model-based design of experiments under structural model uncertainty 145 **Marco Quaglio, Eric S. Fraga and Federico Galvanin**	**OC-94181 HYDROGEN FROM GLUCOSE BY SUPERCRITICAL WATER GASIFICATION** M. Yurdakul, J. Cambra, N. Ayas Turkey	
	18:30 A Novel Approach for Risk Minimization in Life-Cycle Oil Production Optimization 157 **Andrea Capolei, Lasse Hjuler Christiansen and John Bagterp Jørgensen**		

	ROOM C8	ROOM D1
16:00 – 17:30h	TOPIC 7.3 Water Management & Treatments 2 Chairs: Pavarajarn, Garcia	JE-CFD Use of CFD to Improve Chemical Processes 2 Chairs: R. Utkar, Marchioli
	OC-86736 Evaluation of AOPs for sulphur removing from liming wastewater in a tannery, located in Colombia. D. Ovalle Gonzalez, R. Agudelo Valencia, S. Vargas Diaz Colombia	**KN-50851 Simulating phase separation in a micellar three-phase system using CFD: coalescence modelling and application to a horizontal settler** L. Medeiros de Souza, A. Misra, L. Hohl, G. Janiga, M. Kraume, D. Thévenin Germany
	OC-85136 Equilibrium and kinetic studies on lead removal from effluent by waste PCB derived material M. Xu, G. McKay Hong Kong University of Science and Technology , China PR Hamad bin Khalifa University, Qatar	**OC-79571 A New Method for Computation of Age Distribution in General Flows** M. Liu, United States of America
	OC-83481 Ozonation of reactive orange 4 azo dye over mesoporous material supported catalyst A. Saroha, S. Ghuge India	**OC-72241 CFD based simulation of the discharge effects on safety relief valve performance** S. Taggart, C. Doyle, W. Dempster, X. Yu Strathclyde University , United Kingdom
	OC-82426 Addressing the challenge of organic micropollutants in wastewater treatment: emerging trends T. Alvarino, S. Suarez, J. Lema, F. Omil Spain	**OC-57226 Numerical Analysis of the Flame Spray Process: Influence of the Combustion Kinetic Mechanism** L. Buss, P. Bianchi Neto, H. França Meier, U. Fritsching, D. Noriler Germany

	ROOM C8 (Cont.)	ROOM D1 (Cont.)
16:00 – 17:30h	TOPIC 7.3 Water Management & Treatments 2 Chairs: Pavarajarn, Garcia	JE-CFD Use of CFD to Improve Chemical Processes 2 Chairs: Montante, Marchioli
	OC-78666 Removal of pharmaceutically active compounds from municipal wastewater treatment plants using combined both Ultrafiltration and Nanofiltration (UF/NF) membranes and Sequencing Batch Reactor (SBR) as tertiary treatment J. Garcia-Ivars, C. Carbonell-Alcaina, A. Vona, J. Durá-María, C. Moscardó-Carreño, M. Alcaina-Miranda, M. Iborra-Clar Spain	**SOC-47636 CFD analysis of Taylor bubble formation in shear thinning liquids** S. Sontti, A. Atta India
		SOC-73941 Combustion Monitoring in an Industrial Cracking Furnace Based in Combined CFD and Spectrometric Techniques C. Herce, A. González-Espinosa, T. Guégués, A. Gil, F. Brunet, L. Ferré, A. Arias, M. Gil, C. Cortés Spain
		SOC-74536 CFD investigation for stainless corrosion by pitting and FAC in biodiesel production by transesterification D. Ferreira, C. Torres, V. Lins, S. Park Brazil

	ROOM D2	ROOM D3	ROOM D4
16:00 – 19:00h	JE-ESCAPE27 T4.- Process monitoring and control Chairs: Dr. Vicenç Puig and Dr. Filip Logist	16:00 – 17:30h TOPIC 3 Chemical & photochemical reactors 2 Chairs: van den Berg, Bazzanella	16:00 – 17:30h TOPIC 7.6- Clean Energy Processes & New Energy Vectors 2 Chairs: Hu, Alvarez-Guerra
	16:30 Efficient Nested Modifier Adaptation for RTO using Lagrangian functions 1723 **Tania Rodríguez-Blanco, Daniel Sarabia, Daniel Navia and César de Prada**	**OC-78111 Effect of Process Parameters on High Density Polyethylene Wax Properties** A. Keshavarzian, K. Afzali Iran	**OC-74561 Transactional Carbon Accounting** F. DeGroff United States of America
	16:50 Resource efficient operation of an evaporator network in the viscose fiber production 1735 **Marc Kalliski, Bernhard Voglauer, Gerhard Seyfriedsberger, Christian Jasch, Thomas Röder and Sebastian Engell**	**OC-43031 Catalyst deactivation in in-situ and ex-situ biomass catalytic pyrolysis** K. Kalogiannis, S. Stefanidis, A. Lappas, Greece	**OC-66096 Chemical looping reforming of methane and co2 splitting using La1-xSrxFeO3 (x = 0, 0., 0., 0., 0., 0., 1) PEROVSKITES** D. Sastre Quemada, D. Serrano, P. Pizarro, J. Coronado Spain
	17:10 Gas Lift Optimization under Uncertainty 1753 **Dinesh Krishnamoorthy, Bjarne Foss and Sigurd Skogestad**	**OC- 88831 Numerical investigation of the impact of washcoat deposition on the performance of particulate filters** I. Belot, D.Vidal, R.E. Hayes, B. van Setten, F. Bertrand	**OC-65566 Sequence 'bioreactor - membrane concentrator - catalytic converter' for energy recovery from biomass** V. Teplyakov, M. Tsodikov, A. Netrusov (Russia)
	17:30 Economic Optimizing Control for Single-Cell Protein Production in a U-loop Reactor 1759 **Andre Drejer, Tobias K. S. Ritschel, Sten Bay Jørgensen and John Bagterp Jørgensen**	**OC-32516 Modeling of photocatalytic reactors based in intrinsic kinetic parameters obtained in optically differential conditions** C. Casado, M. Muñoz, R. Timmers, R. van Grieken, J. Marugán Spain	**OC-57826 Integration of Renewable Energy Sources into Petroleum Refining for Sustainable Production of Transportation Fuels** M. Al Jamri, R. Smith, J. Li United Kingdom
	17:50 Effective Model Adaptation in Iterative RTO 1717 **Afaq Ahmad, Weihua Gao and Sebastian Engell**	**OC-96231 Hydrodynamic Measurements for Split Airlift Reactor via Non-invasive RPT and CT Techniques** L. Sabri, A. sultan, M. Aldahhan United States of America	**OC-56961 Investigation on the mobilization of membrane-based biogas upgrading plants** S. Spitzer, M. Miltner, M. Harasek Austria
		OC-44171 Homogeneous and Heterogeneous Photocatalysis in a Falling Film Microreactor T. Rehm, S. Gros, A. Renken, D. Fabry, M. Rueping Germany	**OC-55551 Depolymerisation of lignin: towards the production of natural phenolics** N. Gil-Lalaguna, C. Dueso, J. Palomo, C. Martínez, S. Moles, J. Salafranca, A. Gonzalo, J. Sánchez, J. Arauzo (Spain)

	ROOM D5	ROOM D6	ROOM D7
16:00 – 17 :30 h	JE-PARMAT Mixing Chairs: Baldyga, Özcan-Taşkın	TOPIC 2 Heat & Mass Transfer 2 Chair: J. Baldyga y Sorensen	ICOSSE 1-The Transition to Sustainable Living 2 Chair: Jim Petrie, Sophie Duquesne
	OC-64016 A novel factorial design search to determine realizable constant sets for a multi-mechanism model of mixing sensitive precipitation S. Kresta, F. Maluta, A. Komrakova Canada	**OC-25366 CFD Modeling of Hydrodynamic Characteristics in Gas-liquid Two-phase Reactors** J. Wu China PR	**OC-100046 Sustainability education approaches for life-long learning – Are we there yet?** J. Glassey, S. Haile Newcastle University
	OC 83176 Numerical analysis of powder mixing dynamics in a ribbon mixer A.Janda, C. Labra	**OC-33676 Oxygen Mass Transfer in Oxygen/ Membrane/Water Flow Systems** M. Faria, C. Moreira, V. Semião, M. de Pinho Portugal	**OC-72621 A new decision-support framework for integrating circular economy principles into business practice** A. Azapagic, J. Fernandez Mendoza, A. Gallego Schmid United Kingdom
	OC-35561 Characterization of a vibromixer - experimental and modelling study of mixing in a batch crystallizer P.Orlewski, Y.Wang, M.Sadat, M. Iggland, M. Mazzotti	**OC-63691 Water crystallisation in highly concentrated systems** S. Bakalis, O. Gouseti, P. Fryer United Kingdom	**OC-39641 Professional Development and Lifelong Learning for Sustainability** J. Seay United States of America
	OC 53346 JUST SUSPENDED SPEED OF MIXED SLURRIES WITH NON-SPHERICAL PARTICLES B.Kutukcu, I. Ayranci	**OC-84231 Modeling and numerical simulation of chemisorption of CO2 into NaOH solution in a bubble column by computational mass transfer method** C.Zhang,X.Yuan,KT.Yu	**OC-73461 Integrated design and analysis of local food-energy-water systems** M. Leung Pah Hang, E. Martinez-Hernandez, Y. Yao, H. Veldhuis, M. Leach, A. Yang United Kingdom
	OC-71451 Mixing in Oscillating Columns: Experimental and Numerical Studies S. Bale, K. Clavin, M. Sathe, A. Berrouk, F. Knopf, K. Nandakumar United Arab Emirates	**OC-89176 Cohesive powders in thermochemical energy storage applications: Fluidization and heat transfer behavior** M.Wuerth, M.Becker,R. Sonnenn, A.Vandersickel, S. Gleis, H.Spliethoff	**OC-50221 Energy and water mitigation strategies in the South African commercial meat sector** V. Russo, H. von Blottnitz South Africa
	SOC-79101 Modelling of co-rotating twin-screw extruders in the pharmaceutical industry using a multi-component model N. Mitchell, M. Fuentes Gari, J. Robertson, S. Bermingham, J. Li United Kingdom	**OC-92506 Simultaneous heat and mass model for a stationary horizontal drum partially filled with particles** J.Thomáo, É. F.Rezendes Tada	
	SOC-63711 Blend Time Measurements in a Confined Impeller Mixing Test Cell M. Machado, K. Jairamdas, A. Bhalerao, N. Pinto, S. Kresta Canada		

	ROOM D5 (Cont.)	ROOM D6 (Cont.)	ROOM D7 (Cont.)
16:00 – 17 :30 h	JE-PARMAT Mixing Chairs: Baldyga, Özcan-Taşkın	TOPIC 2 Heat & Mass Transfer 2 Chair: J. Baldyga y Sorensen	ICOSSE 1-The Transition to Sustainable Living 2 Chair: Jim Petrie, Sophie Duquesne
	SOC-35221 Experimental analysis of solids dissolution in stirred vessels of different sizes by Electrical Resistance Tomography C. Carletti, S. Bikić, A. Paglianti, G. Montante Italy		

	ROOM A2	ROOM A3	ROOM A4
17:30 – 19:00h	TOPIC 6.1 - Reactor Design & Eng. 1 Chairs: P. Jacques, M. Canovas	JE- Process Safety-Management 1 Chair: Trish Kerin	JE-SPOUTED BED Scaling up & Applications Chairs: Heinrich, Olazar
	OC- 40386 Enhanced succinic acid production by Basfia succiniciproducens through integrated fermentation with electrolytic membrane extraction C. Pateraki, S. Andersen, A. Koutinas, K. Rabaey Greece	**KN - 96301 A Journey to Excellence in Process Safety Management** M. Mannan United States of America	**KN – 96731 Pharmaceutical Applications of Spouted Beds: Solid Dosage Forms** L. Freitas Brazil
	OC- 53541 BIOCHEM: A new methodology for designing mixed-culture bioprocesses assisted with bioenergetics models A. Regueira, M. Mauricio-Iglesias, M. Carballa, J. Lema Spain	**OC - 49921 Preserving process safety information as a key asset of the company** R. Camerano Ruiz Colombia	**OC – 42366 Effect of pulsed air flow on hydrodynamics of a slot rectangular spouted bed** M. Parise, Z. Wang, C. Lim, J. Grace Canada
	OC- 34576 Characterization of an innovative fed-batch microplate feeding system D. Keil, B. Dittrich, S. Selzer, J. Büchs Germany	**OC - 50681 Optimising risk operations in large-scale facilities using dynamic risk models** A. Casal, M. Dahlby, K. Giljarhus Spain	**OC – 33146 usage of a spouted bed spray granulation process for fabrication of composite materials** E. Eichner, M. Dosta, S. Heinrich, G. Schneider Germany

	ROOM A2 (Cont.)	ROOM A3 (Cont.)	ROOM A4 (Cont.)
17:30 – 19:00h	TOPIC 6.1 - Reactor Design & Eng. 1 Chairs: P. Jacques, M. Canovas	JE- Process Safety-Management 1 Chair: Trish Kerin	JE-SPOUTED BED Scaling up & Applications Chairs: Heinrich, Olazar
	OC- 30341 Hydrodynamic and Oxidative Stresses in Aerobic Bioprocesses: the Role of Oxygen R. Alberto, S. Victoria E., G. Emilio, P. Auxiliadora, G. Felix Spain		**SOC – 23716 Biomass torrefaction in a continuous slot-rectangular spouted bed reactor** Z. Wang, C. Lim, J. Grace Canada
	OC- 81031 Resonant Acoustic Mixing Technology for the production of recombinant proteins By E. coli in shake flasks M. Trujillo-Roldan, N. Valdez-Cruz, G. Reynoso-Cereceda, S. Restrepo-Pineda Mexico		**SOC - 53446 Coating of organic aerogels using spouted bed technology** M. Goslinska, I. Selmer, I. Smirnova, S. Heinrich Germany
	OC- 94171 High-throughput cultivation screening of aerobic microbial platforms under limited mass transfer conditions S. Alonso United Kingdom		**SOC - 48041 Effect of a fountain confiner on the drying of fine sand in conical spouted beds** A. Pablos, J. Vicente, R. Aguado, M. Olazar Spain
			SOC - 48406 Particle coating in a three-dimensional prismatic spouted bed S. Pietsch, P. Kieckhefen, S. Heinrich, M. Müller, M. Schönherr, F. Kleine Jäger Germany
			SOC - 45501 Performance of fountain confined spouted bed in biomass steam gasification G. Lopez, M. Cortazar, J. Alvarez, I. Barbarias, A. Arregi, L. Santamaria, M. Amutio, M. Olazar Spain
			SOC - 54586 Rice Spouting for Manufacturing Inclusion Complexes of Endopleura uchi L extracts in beta-ciclodextrin L. Freitas, A. Montes, E. Campos, E. da Conceição, Brazil

	ROOM A5	ROOM B1	ROOM B2
17:30 – 19:00h	JE-IPIC Teaching/ Batch to Continuous 2 Chairs: P. Westmoreland y M.Cabassud	TOPIC 5.2 Functionalized Nanofilaments Chairs: Monzón	JE-LIGNOCELLULOSIC-Integrated Biorefineries 2 Chairs: Christopher, Park
	KN – 47576 Teaching the Fundamental Concepts and Practice of Process Intensification: The Delft-Leuven Approach A. Stankiewicz, T. Van Gerven, G. Stefanidis Netherlands	**KN- 86336 Electrospinning as a versatil tool for the preparation of submicron diameter fiber adsorbents and catalysts** J. Rodriguez-Mirasol, Spain	**KN-75166 Glycerol upgrading to acrylonitrile in the context of oil plants biorefineries design** S. Sébastien Paul, B. Katryniok, A. Ghalwadkar, C. Guillon, F. Dumeignil France
	OC- 43366 Teaching Entrepreneurship and Process Intensification Principles in Twente F. David, H. Gardeniers Netherlands	**OC- 32056 Tuning of surface properties of biodegradable nanofibers by deposition of thin plasma coatings.** A. Manakhov, D. Shtansky, E. Kedronova, J. Medalova Russia	**OC-69066 The LignoCity Initiative - upscaling of lignin concepts** P. Tomani Sweden
	OC – 42356 Developing an intellectual and educational framework for modular process intensification P. Westmoreland United States of America	**OC- 46096 Surface modification of nanofibers prepared by microchannel wet-spinning process** Y. Imai, T. Watanabe, T. Ono, Japan	**OC-52676 Catalysis meets non-thermal separation for the production of (alkyl)phenols and hydrocarbons from pyrolysis oil** Z. Cao Germany
	OC – 83516 High pressure water reforming of wet biomass for energy and chemicals Z. Knez, M. Skerget, M. Knez-Hrncic Slovenia	**OC- 83291 Synthesis of novel nanotube-family materials using arc plasma in quenching liquid and energy application study** N. Sano, H. Tamon Kyoto University, Japan	**SOC-88421 Brazilian production of non-wood biomass residues and challenges breakthrough technologies for its used as feedstock for industrial applications** M. Berni, S. Bajay, T. Carneiro, T. Franco, Brazil
	SOC - 88681 Multi-cyclonic vacuum cleaners as a pedagogic case study of process intensification J. Commenge, France	**OC- 29556 Nano-engineered electrodes based on TiO2/Ti nanotubes and Cu doped carbon nanotubes for water photo-electrolysis and CO2 conversion** C. Ampelli, C. Genovese, F. Tavella, S. Perathoner, G. Centi Italy	

	ROOM A5 (Cont.)	ROOM B1 (Cont.)	ROOM B2 (Cont.)
17:30 – 19:00h	JE-IPIC Teaching/ Batch to Continuous 2 Chairs: P. Westmoreland y M.Cabassud	TOPIC 5.2 Functionalized Nanofilaments Chairs: Monzón	JE-LIGNOCELLULOSIC-Integrated Biorefineries 2 Chairs: Christopher, Park
	SOC – 30326 Intensified flow separator infrastructure and expertise for the materials industry J. Jordens, T. Van Gerven Belgium		**SOC-89606 Glacial acetic acid production from bioconversion of poplar biomass: techno-economic assessment and environmental impacts** R. Morales-Vera, E. Budsberg, J. Crawford, R. Bura, R. Gustafson United States of America
	SOC – 27466 Characterisation of Micromixing Efficiency in T and Y Narrow Channel Reactors: Evaluation with Villermaux / Dushman Test Reaction S. Al-Hengari, K. Boodhoo Libya		**SOC-75211 Overview of biomass upgrading activities at Lille University** F. Dumeignil France
	SOC - 58606 New micromixers based on distillation columns for chemical reaction H. S. Santana, J. L. Silva Jr, O. P. Taranto Brazil		

	ROOM B3	ROOM C1	ROOM C4
17:30 – 19:00h	TOPIC 2- Thermo dynamics-Experimental data- Analisis Chairs: Striolo, Wilding	TOPIC 6 ACS BIOT ESBES Event Students competition in Biosimilar production **Prof Marcell Ottens** (ESBES) and Prof. **Bill Kelly** (ACS-Biot) Student Contest Finals Nominated Student Team 1 Nominated Student Team 2 Nominated Student Team 3	TOPIC 7.2 Air Pollution Control 3 Chairs: Lhuissier, Gonzalez-Velasco
	KN- 43136 Investigation of the equilibrium properties of {water- polyol} solutions O. Toure, B. Boit, C. Dussap, O. Baudouin, L. Campagnolo France		**OC-26201 Process intensification and system design of a dry SO2 scrubbing system for flue-gas treatment. Study case: Biogas Treatment** I. Charry Prada, R. Rivera Tinoco France
	OC-28276 Phase Equilibrium Correlation: Regarding the full consistency of the thermodynamic parameters obtained A. Marcilla, J. Reyes-Labarta, M. Olaya Spain		**OC-20451 Experimental study on effect of water vapor on NO reduction by methane over iron** Y. Su, H. Zhou, W. Deng, B. Zhao China PR

	ROOM B3 (Cont.)	ROOM C1 (Cont.)	ROOM C4 (Cont.)
17:30 – 19:00h	TOPIC 2- Thermo dynamics- Experimental data- Analisis Chairs: Striolo, Wilding	TOPIC 6 ACS BIOT ESBES Event Students competition in Biosimilar production **Prof Marcell Ottens** (ESBES) and Prof. **Bill Kelly** (ACS-Biot) Student Contest Finals Nominated Student Team 1 Nominated Student Team 2 Nominated Student Team 3	TOPIC 7.2 Air Pollution Control 3 Chairs: Lhuissier, Gonzalez-Velasco
	OC-63336 Solubility and transport of gas mixtures in glassy polymers G. Sarti, M. Minelli Italy		**SOC-45061 Effect of carbon sources supplementation on formaldehyde-degrading microorganisms growth and formaldehyde dehydrogenase bioproduction and stability** C. Castro, M. Duprez, T. Senechal, N. Rhazi, A. Hantson Belgium
	OC-45321 Extensional properties of polymer solution effect on vortex generation on two-dimensional turbulence R. Hidema, I. Murao, R. Yoshida, H. Suzuki, Y. Komoda, K. Suzuki Japan		
	OC-31611 New Method to predict the density of pure liquids using the Generalized Van der Waals equation M.W.Córdova Villanueva		**SOC-40501 Degradation study of odorous pollutants in air mixture by combining dielectric barrier discharge plasma with photocatalysis at pilot scale** W. Abou saoud, A. Assadi, A. Bouzaza, M. Guiza, W. Aboussaoud, A. Ouederni, D. Wolbert Tunisia
	SOC-66816 Advanced analysis of long time stability of density measurement by vibrating tube density meter Z. Wagner, M. Bendová, J. Rotrekl, A. Andresová, M. Čanji Czech Republic		**SOC-32681 Kinetic Modeling of Carbon Oxidation on Continuous Regeneration at Low Temperature for Numerical Simulation of Fluidized Bed Type PM Removal Device** K. Yokoo, T. Yamamoto, J. Tatebayashi, Japan
	SOC-87476 Phase equilibria and thermodynamic modelling of the ternary system CO2 + 1-decanol + n-tetradecane M. Ferreira, C. Schwarz South Africa		**SOC-25101 Source identification of pm10-bound heavy metals from multi-site data near an industrialized area** A. Hernández-Pellón, I. Fernández-Olmo Spain
	SOC-89246 Separation of ethanol and water by fractional extraction using mutually immiscible ionic liquids as solvents H. Rodríguez, A. Álvarez, M. Lugilde, O. Bacha, M. Castro, A. Arce, A. Soto Spain		

	ROOM C6	ROOM C7	ROOM C8
17:30 – 19 :00 h	TOPIC 3 Kinetics & Catalysis 3 Chairs: Zhang, Ayas	JE- Process Safety- Cases Studies & Lessons Learnt 2 Chair: Alexis Pey	TOPIC 7.3 Water Management & Treatments 3 Chairs: Burger, Miranda
	OC-38651 Production of high purity fructose in a continuous reactor employing a heterogeneous catalyst A. Nebreda, V. Russo, T. Salmi, K. Eränen, D. Murzin, H. Grénman Finland	**KN-23026 Lessons learned from runaway reactions** Z. Gyenes Italy	**OC-77396 Study of nanofiltration for siloxanes removal in wastewater** H. Roux-de Balmann, C. Albasi, A. Boedec, J. Grollemund, C. Dehan France
	OC-62656 Influence of particle size in sucrose esters production by transesterification of sucrose and methyl palmitate in a solvent-free reactive system J. Rivera, A. Suaza, A. Orjuela, M. Gutierrez Colombia	**OC-45356 Modified Theory for the Simulation of Acrylic Industrial Emulsion Polymerizations** S. Copelli, R. Rota, F. Maestri, G. Storti, C. Sala Cattaneo Italy	**OC-70481 Optimization of biopolymer addition in the clarification of waste-water containing emulsified petroleum oil** N. Zaritzky, J. Perez Calderon, M. Santos Argentina
	OC-26766 Deactivation of a Ni supported catalyst during the steam reforming of volatiles from waste polyethylene pyrolysis A. Ochoa, I. Barbarias, J. Valecillos, M. Artetxe, A. Gayubo, M. Olazar, J. Bilbao, P. Castaño Spain	**OC-33496 Optimal Process Safety Where Pressure Relief Is Required** R. Bours, J. Rovira Belgium	**OC-69266 Application of metal cations, advanced oxidation and ultrasonic cavitation for enhanced digested sludge dewatering** T. Sen, E. Hong, A. Yeneneh, H. Ang Australia
	OC-45546 Balancing product and byproduct formation in the methanol-to-olefin process over a HZSM-5 catalyst by changing space time J. Valecillos, M. Gamero, A. Ochoa, A. Aguayo, P. Castaño Spain	**OC-69851 Reviewing the risk acceptance criteria in ATEX** A. Pey, G. Suter, S. Díaz Switzerland	**OC-68376 Efficient photocatalytic degradation of perfluorooctanoic acid (PFOA) by TiO2 doped with graphene oxide** B. Gomez-Ruiz, P. Ribao, N. Diban, M. Rivero, I. Ortiz, A. Urtiaga, Spain
	OC-38476 Experimental and modeling study of Polycyclic Aromatic Hydrocarbon (PAH) formation during acetylene pyrolysis in low pressure gas carburizing conditions T. Bensabath, D. Le, T. Nicot, J. Kunz-Iffli, H. Monnier, P. Glaude, France	**OC-32191 Study of Methane/Carbon Black Nanoparticles Explosions: Dispersion and Turbulence Effects on the Flame Velocity** D. Torrado, A. Pinilla, C. Murillo, M. Amin, F. Munoz, P. Glaude, O. Dufaud France	**OC-67031 Design and evaluation of a forward osmosis microalgae bioreactor to combined microalgae dewatering and wastewater reuse** G. blandin, E. Onyshchenko, J. Comas Ukraine

	ROOM C6 (Cont.)	ROOM C7 (Cont.)	ROOM C8 (Cont.)
17:30 – 19 :00 h	TOPIC 3 Kinetics & Catalysis 3 Chairs: Zhang, Ayas	JE- Process Safety- Cases Studies & Lessons Learnt 2 Chair: Alexis Pey	TOPIC 7.3 Water Management & Treatments 3 Chairs: Burger, Miranda
			OC-64576 Application Of Magnetic Particles And Magnetic Separation For Pollutant Concentrated Wastewater Treatment. P. Augusto, T. Castelo-Grande, A. Estevez Spain

	ROOM D1	ROOM D3	ROOM D4
17:30 – 19 :00 h	JE-CFD Use of CFD to Improve Chemical Processes 3 Chairs: Van der Akker, Wang	TOPIC 3 Chemical & photochemical reactors3 Chairs: Cornet, Estenoz	TOPIC 7.6-Clean Energy Processes & New Energy Vectors 3 Chairs: Duran, Santos
	KN-47651 **CFD based support of optimizing operating conditions and geometry of a fluidized bed crystallizer with conical entrance section** K. Kerst, L. Medeiros de Souza, E. Temmel, A. Bartz, A. Seidel-Morgenstern, G. Janiga Germany	**OC-34011 Heat Optimization in Liquid Organic Hydrogen Carriers Reactors** S. Emamjomeh, E. Schlücker Germany	**OC-49126 Novel materials for hydrogen production by solar driven thermochemical water splitting** M. Orfila, M. Linares, R. Molina, R. Sanz, J. Marugán, J. Botas Spain
	OC-41916 CFD Modelling of Almond Drying A. Chilka, V. Ranade United Kingdom	**OC-63806 HDPE pyrolysis in a reactive distillation system: Influence of time and temperature** E. Santos, F. Lemos, A. Lemos Portugal	**OC-45901 Ternary Ni/TiO2/Graphene Photocatalyst for Hydrogen Evolution via Glycerol Photocatalytic Reforming: Preparation, Characterization, and Photocatalytic Activity** T. Seadira, T. Ntho, C. Masuku, M. Scurrell South Africa
	OC-48966 Influence of particle agglomeration and breakup on cyclone performance O. Sgrott Júnior, M. Sommerfeld Germany	**OC-26146 Flame synthesis of carbon nanotubes (CNTs) in a diesel engine using floating catalysts and n-dodecane/ ethanol mixing fuel and identification of CNT precursor** S. Suzuki, S. Mori Japan	**OC-44986 Single-step production of biodiesel from high acid value waste cooking oil using supercritical methanol** A. Omar, M. Gadalla, B. Saha Egypt

	ROOM D1 (Cont.)	ROOM D3 (Cont.)	ROOM D4 (Cont.)
17:30 – 19 :00 h	JE-CFD Use of CFD to Improve Chemical Processes 3 Chairs: Van der Akker, Wang	TOPIC 3 Chemical & photochemical reactors3 Chairs: Cornet, Estenoz	TOPIC 7.6-Clean Energy Processes & New Energy Vectors 3 Chairs: Duran, Santos
	OC-90336 Porous membrane cleaning using supercritical carbon dioxide - experimental investigation and CFD modeling J. Krzysztoforski, M. Henczka Poland	**OC-42996 Experimental and numerical analysis of the dynamic behavior of a fixed-bed heat exchanger-reactor for the CO2 methanation** R. Try, A. Bengaouer, C. Jallut France	**OC-44641 Biomass liquefaction in heavy solvent** S. Kersten, J. Lange Netherlands
	SOC-86041 Modeling of substance migration in simulated biomedical systems A. Adach Poland	**OC-95585 Evaluation of reactor selection exemplified by methanol synthesis** S. Kersten, M. Van Gaalen, W. Brilman, H. van den Berg Netherlands	**OC-44046 Biodiesel production from Hibiscus Cannabinus L. and Gliricidia Sepium using sulfonated carbon nanotube as catalyst** M. Macawile, A. Durian, J. Gallo, L. Razon, R. Tan, J. Auresenia Philippines
	SOC-76181 Flow characterization of a dynamic filtration system based on computational fluid dynamic methods H. Sander Marke, E. Broberg Hansen, M. Pinelo, U. Krühne Denmark	**OC-38921 Estimation of the Technological Potentials of Modern Light Sources for Photoreactions** D. Ziegenbalg, M. Sender Germany	**OC-43536 Effect of the support in molybdenum phosphide catalysts for the hydrotreatment of non-edible vegetable oils** J. Campos-Martin, M. Alvarez-Galvan, G. Blanco-Brieva, M. Capel-Sanchez, S. Morales-delaRosa, J. Fierro Spain
	SOC-61616 Experimental and computational study of wall wetter for batch evaporation A. Waval, H. Khadamkar, P. Nemade, C. Mathpati India		

	ROOM D5	ROOM D6	ROOM D7
17:30 – 19 :00 h	JE-PARMAT-Multiphase processes & Cristallization Chairs: Schlütter, Baldyga	TOPIC 2 Heat & Mass Transfer 3	PhD Workshop /Writing a paper- Wiley
	OC-56496 Particle Suspension in Mixing Vessels: Comparing a Fully Coupled CFD-DEM with an Eulerian Multiphase Approach T. Eppinger, O. Baran, R. Aglave Germany	**OC-34851 Microwaves Assisted Freezing: Experiments and Modelling** M Sadot, S. Curet, O.rouaud, A.le Bail, M.havet	
	OC-84111 Modelling Batch Cooling Crystallization of L-glutamic Acid: From Laboratory to Industrial Pilot Scale N. Mitchell, Y. Salman, C. Ma, T. Mahmud, J. Mack, K. Roberts United Kingdom	**OC-37901 Heat Transport Phenomena of Titanium Dioxide Nnaoparticle Dispersion in Flowing Liquid** Wen-Tung. Cheng, Wei-Ching Chen	
	OC-79001 Design and Performance Assessment of Continuous Crystallization Processes Resolving Racemic Conglomerates T. Köllges, T. Vetter United Kingdom	**OC-52521 Absorption characteristics of Mellapak structured packings under distillation-like conditions** J.Haidl, F.Rejl, L.Valenz	
	OC-45131 Ultrasound-Enhanced Particle Breakage for Intensified Deracemization C. Xiouras, J. Ter Horst, T. Van Gerven, G. Stefanidis Belgium		
	OC-59841 Problem of mass transfer in liquid-liquid systems revisited J. Baldyga, M. Jasinska Poland		
	SOC-63826 Yield Stress Build up in Mineral Slurries and Implications for Design of Mixing Equipment M. Machado, D. Ulrich, A. Shokrollahzadeh, S. Sanders, T. Martin, S. Kresta Canada		

	ROOM D5 (Cont.)	ROOM D6 (Cont.)	ROOM D7 (Cont.)
17:30 – 19 :00 h	JE-PARMAT-Multiphase processes & Cristallization Chairs: Schlütter, Baldyga	TOPIC 2 Heat & Mass Transfer 3	PhD Workshop/Writing a paper- Wiley
	SOC-96146 Effect of impeller geometry and scale-up on gas-liquid mass transfer rates in unbaffled stirred tanks. F. Grisafi, G. caputo, T. Moucha, A. brucato, F. Scargiali, L. Labik Italy		
	SOC-96311 Investigation of Gas Mixing in Vortex Mixer by CFD, PIV and PLIF G. Gecim, E. Erkoc Turkey		

19:00 h Cheese & Wine Reception around the posters

	ROOM A2	ROOM A3	ROOM A4
08:30 - 10:00 h	TOPIC 6.1 Reactor Design & Eng.2 Chairs: P. Jacques	TOPIC 3 Kinetics & Catalysis 4 Chair: Salmi y Vilaseca	JE- Process Safety-Cases Studies & Lessons Learnt 3 Chair: Hans Volkmar Schwarz
	OC-54616 Environmental stress conditions to enhance the recombinant protein production in Pichia pastoris. X. Garcia-Ortega, J. Montesinos-Seguí, F. Valero Spain	**OC-84816 Novel insights on H2S and COS removal for gas purification applications** D. Chiche, L. Neveux, V. Girard, T. Hlayhel, K. Barthelet, J. Perez-Pellitero, A. Baudot, D. Bazer-Bachi, A. Gay, J. Schweitzer, L. Favergeon, M. Pijolat, C. Geantet, G. Costentin France	**KN 93721 Safety life cycle analysis applied to the engineering of pressure relief valves in process plants** J.Basco , J.Casal, J. A.Vílchez
	OC-75896 Evaluating process parameters of surface-aerated horizontal tubular bioreactors for the growth of animal cells R. Sharma, S. Harrison, S. Tai South Africa	**OC-84276 Kinetics and Mechanism of Refractory Gold Alkaline Cyanide Leaching: Review** R. Asamoah, W. Skinner, J. Addai-Mensah Australia	**KN-93741 Rigorous determination of the relieving load and sizing of pressure relief valves for two-phase flow** J. Basco, A. Guinea Spain
	OC-70906 Integration and scale-up of multiphase fermentations M. Cuellar, K. Steinbusch Netherlands	**OC-85601 Applying bench-scale olefin polymerization kinetics in large-scale industrial reactors** J. Guzman, M. Tamaddoni, F. Bertola Netherlands	**OC-60101 Accounting for the Effect of the Total Mass of Fuel Released in Predicting the Consequences of Vapor Cloud Explosions** C. Bauwens, S. Dorofeev United States of America
	OC-42231 Gentle stirring in a new bioreactor with slow cross-flow agitation improves the growth of T harzianum and the production of xylanase by solid-state fermentation N. López-Ramirez, T. Volke-Sepúlveda, I. Gaime-Perraud, G. Saucedo-Castañeda, E. Favela-Torres Mexico	**OC-88116 Analysis of the performance of a membrane bioreactor** E. Nagy, M. Meizinger, I. Hegedüs Hungary	**OC-40836 Learning from Incidents - Linking incident analysis with BowTie based risk assessments** P. McCulloch United Kingdom
	OC-52931 In-situ microscopy allows for monitoring microbial growth and product accumulation based on the single-cell size distribution A. Marba Ardebol, J. Emmerich, P. Neubauer, S. Junne Germany	**OC-51826 Synthesis of n-butanol from ethanol over Pd/Hydrotalcite catalyst in a fixed bed reactor: effect of hydrogen co-feeding** M. Hernández Tapias, M. Portillo Crespo, G. Cabello González, Villanueva Perales, F. Vidal-Barrero, P. Ollero Spain	**OC-55911 Bridging the Safety Gap: The Key Role of a Sound Process Safety Culture in Minimizing Audit Findings** E. Prats, G. Dunjó United States of America

	ROOM A2 (Cont.)	ROOM A3 (Cont.)	ROOM A4 (Cont.)
08:30 - 10:00 h	TOPIC 6.1 Reactor Design & Eng.2 Chairs: P. Jacques	TOPIC 3 Kinetics & Catalysis 4 Chair: Salmi y Vilaseca	JE- Process Safety-Cases Studies & Lessons Learnt 3 Chair: Hans Volkmar Schwarz
	OC-46616 Non-invasive online measurement of optical densities and viscosities in parallel operated stirred-tank bioreactors S. Hensler, L. Franzgrote, T. Kurzrock-Wolf, S. Mahlstedt, K. Kress, K. Kaufmann, D. Weuster-Botz Germany	**OC-26831 Selective oxidation of lignocellulosic biomass to formic acid and high-grade cellulose with tailor-made polyoxometalate catalysts** J. Albert, D. Voss Germany	

	ROOM A5	ROOM B1	ROOM B2
08:30 - 10:00 h	JE-IPIC-Energy Activation Chairs: G. Stefanidis y T.Van Gerven	TOPIC 6.5 Biorefineries 1 Chair: L.Wielen, J.Villar	JE-LIGNOCELLULOSIC Thermo-conversion & Bioenergy Chairs: Dumeignil, Area
	KN-30271 Ultrasound assisted particle size control by continuous seed generation and batch growth J. Jordens, E. Canini, B. Gielen, T. Van Gerven, L. Braeken Belgium	**OC-73046 Biorefinery approach based on Avocado (Persea americana mill.). Colombian case.** J. Davila, M. Rosenberg, E. Castro, C. Cardona Colombia	**KN-93691 Lipid content and fatty acid profile of Choricystis minor var. minor before and after extraction with conventional solvents and/or compressed fluids** L. Pereira Ramos, A. da Cruz Lima, D. Szczerbowski Vidal, A. Zandoná Filho, M. Corazza, Brazil
	OC-66786 Partial oxidation of methane in a gas-liquid plasma millireactor S. Ognier, E. Martinez, M. Zhang, C. Guyon, M. Tatoulian France	**OC-75221 Enhanced 2,3-butanediol production by Enterobacter ludwigii from sugarcane molasses** S. Maina, E. Vogiatzi, E. Stylianou, S. Papanikolaou, A. Aline Machado de Castro, A. Koutinas, A. Vlysidis Greece	**OC-67926 Simulation, Heat Integration and Rectisol-based Decarbonisation for the Production of Synthetic Natural Gas from Biomass** N. Al Lagtah, S. Onaizi United Arab Emirates
	OC – 28396 Study of sensitized photooxygenations in LED-driven spiral-shaped microreactors K. Loubiere, R. Radjagobalou, J. Blanco, S. Elgue, L. Prat, O. Dechy-Cabaret France	**OC-73626 Enzymatic functionalization of dissolved biorefinery lignin with amino and catechol groups with solely biodegradable components** N. Tippkötter, J. Weiermüller, C. Capitain Germany	**OC-82001 Pyrolytic Conversion of Cardboard to a Valuable Chemical: Effect of Acid Pretreatment** S. Kudo, N. Goto, K. Norinaga, J. Hayashi, Japan

	ROOM A5 (Cont.)	ROOM B1 (Cont.)	ROOM B2 (Cont.)
08:30 - 10:00 h	JE-IPIC-Energy Activation Chairs: G. Stefanidis y T.Van Gerven	TOPIC 6.5 Biorefineries 1 Chair: L.Wielen, J.Villar	JE-LIGNOCELLULOSIC Thermo-conversion & Bioenergy Chairs: Dumeignil, Area
	OC-30146 Process intensification in epoxidation of vegetable oils in the presence of heterogeneous catalysis and microwave irradiation in a superior recycled reactor system A. Freites, P. Tolvanen, S. Heredia, M. Gonzales, T. Samson, S. Leveneur, J. Mikkola, T. Salmi Finland	**OC-95671 Techno-economic and environmental assessment of an integrated biorefinery using palm oil crude as raw material.** B. Arrieta, C. Espinosa, K. Ojeda, E. Sanchez Colombia	**OC-46931 Stability investigations of low and high Mw fractions from lignin HTL derived bio-oil** C. Mattsson, H. Nguyen Lyckeskog, S. Andersson, L. Olausson, L. Vamling, H. Theliander2 Sweden
	SOC-78761 Heat Integrated Steam Reforming Membrane Reactor R. Partridge, D. Calabro United States of America	**OC-97345 Towards an integrated bio-refinery approach to process organic waste, residual waste and wastewater: Energy balance and cost analysis** G. Mancini, D. Fino, D. Bolzonella, G. Viviani, A. Brucato Italy	**SOC-89016 Biofuels production by Hydrothermal Liquefaction of Eucalyptus: Influence of reaction conditions and catalyst.** C. Reyes Plascencia, N. Tancredi Uruguay
	SOC-40676 Microwaves and subcritical water for the process intensification of ferulic acid recovery from wheat bran M. Pazo-Cepeda, E. Alonso, M. Cocero Spain	**OC-52321 Development of an advanced biorefinery concept using sugar beet pulp for the production of antioxidants, pectins and succinic acid** M. Alexandri, R. Schneider, J. Venus, A. Koutinas Greece	**SOC-59641 A Comparative Study on the Effect of Chemical Composition in Biomass on the Torrefaction** W. Chaiwat, P. Inthapat, T. Vinijsanun, N. Worasuwannarak, Thailand
	SOC-70381 Optimization of wheat straw delignification process with ionic liquids under microwave radiation A. Martínez Salaberria, J. Labidi, X. Erdocia Spain		**SOC-69766 Two Stage Gasification of Ligno-cellulosic Waste Biomass** J. Haydary, Slovakia
	SOC-52986 Microwave influence on solid-liquid equilibrium A. Álvarez Martín, H. Trigueros Fernández, M. Cocero, R. Mato Spain		

	ROOM B3	ROOM B4	ROOM C1
08:30 - 10:00 h	TOPIC 2.1 Thermo dynamics-Theory-Simulation Chairs: Mathias, Toure	TOPIC 7.1-Resources Use & Sustainable Technologies 1 Chairs: Basu Saha, Fullana	JE-ESCAPE27 T2 - Synthesis and Design. Chairs: Prof. Emanuele Martelli and Prof. Mario Eden
	KN-31306 **Accurate prediction of physical properties for the Gas-To-Liquid process based on molecular simulation methods** I. Economou, K. Papavasileiou, L. Peristeras, J. Chen, G. van der Laan, A. Kalantar[3] Qatar	**OC-96616 Sustainability through service** A. Wolfson Israel	08:30 Computational Analysis of a Two-Phase Continuous-Flow Magnetophoretic Microsystem for Particle Separation from Biological Fluids 1183 **Jenifer Gómez-Pastora, Ioannis Karampelas, Eugenio Bringas, Edward P. Furlani and Inmaculada Ortiz**
	OC-56861 A crossover approach for the Cubic-Plus-Association Equation of State A. Vinhal, G. Kontogeorgis, W. Yan Denmark	**OC-93006 Processing woody biomass – pilot plant and simulation prove feasibility and profitableness!** K. Brandt, F. Streffer[2] Germany	08:50 Dropwise Additive Manufacturing using Particulate Suspensions: Feasible operating space and throughput rates 1207 **Andrew Radcliffe and Gintaras V. Reklaitis**
	OC-87736 An Accurate Molecular-Based Equation of State for the Simultaneous description of Thermodynamic and Transport Properties of Complex Mixtures of Industrial Interest F. Llovell, J. O. Lloret, E. Cané, L. F. Vega[2] United Arab Emirates	**OC-87566 Membrane processes as the key technology in cascaded valorization of municipal organic waste** M. Miltner, F. Kirchbacher, A. Rom, W. Wukovits, M. Harasek, A. Friedl[1] Austria	09:10 Evaluation of an Immiscible Drop Separation System in Micro-channels using CFD 1195 **Carlos Enrique Llano-Serna, Javier Fontalvo-Alzate and Oscar Andrés Prado-Rubio**
	OC-73181 The application of the GCA EOS to fluorinated refrigerant + n-alkane mixtures M. Williams-Wynn, F. Sánchez, P. Naidoo, S. Pereda, D. Ramjugernath[1] South Africa	**OC-86586 Design of biorefinery supply chains for biojet fuel production: A comparative analysis of feedstocks and processing technologies from a techno-economic and environmental perspective.** J. Posada Netherlands	09:30 A Fuzzy Programming Approach to Multi-Objective Optimization for Geopolymer Product Design 1015 **Michael Angelo B. Promentilla, Martin E. Kalaw, Hoc Thang Nguyen, Kathleen B. Aviso and Raymond R. Tan**
	OC-24931 Modified model of generalized Wagner vapor pressure equation for pure substances M.W Córdova Villanueva		

	ROOM B3 (Cont.)	ROOM B4 (Cont.)	ROOM C1 (Cont.)
08:30 - 10:00 h	TOPIC 2.1 Thermo dynamics-Theory-Simulation Chairs: Mathias, Toure	TOPIC 7.1-Resources Use & Sustainable Technologies 1 Chairs: Basu Saha, Fullana	JE-ESCAPE27 T2 - Synthesis and Design. Chairs: Prof. Emanuele Martelli and Prof. Mario Eden
	SOC-63001 Quantitative prediction of gas absorption in arbitrary liquid mixtures C. Meitzner, F. Mayer, R. Lange Germany	**OC-86446 ENVIRONMENTAL IMPROVEMENT OF A POLYETHYLENE REFUSE BAG BY ADDING A MINERAL FILLER (GRANIC 1522): A LIFE CYCLE STUDY** D. Civancik-Uslu, L. Ferrer, R. Puig, P. Fullana-i-Palmer[1] Spain	
	SOC 25661Prediction of viscosities by molecular simulations S.Builes, A. Rendon-Calle, G. Orozco	**OC-85671 Methanol production from steelwork off-gases: energy, economic and environment assessment** J. PORTHA, W. URIBE-SOTO, J. COMMENGE, L. FALK[2] France	

	ROOM C4
08:30 - 10:00 h	Workshop Wiley Author &Editor Exchange

	ROOM C2	ROOM C3	ROOM C5
08:30 - 10:00 h	JE-ESCAPE27 T7 - CAPE Applications Addressing Global Grand Challenges Chairs: Prof. Juraj Kosek and Prof. Fabrizio Bezzo	JE-ESCAPE27 T4- Process Monitoring and Control Chairs: Prof. Costin Sorin Bildea and Prof. Sigurd Skogestad	TOPIC 5.2 Nanomaterials Preparation & Applications 1 Chairs: Valverde
	08:30 Powder stickiness in milk drying: uncertainty and sensitivity analysis for process understanding 2743 **Adrián Ferrari, Soledad Gutiérrez and Gürkan Sin**	08:30 Online DEKF for State Estimation in Semi-Batch Free-Radical Polymerization Reactors 1465 **Santiago D. Salas, Navid Ghadipasha, Wenbo Zhu, Jose A. Romagnoli, T. Mcafee and W. F. Reed**	**OC-38031 Stereocomplexed polylactide-based nanocapsules for controlled release of hydrophilic molecules** T. Watanabe, Y. Sakamoto, T. Ono Japan

	ROOM C2 (Cont.)	ROOM C3 (Cont.)	ROOM C5 (Cont.)
08:30 - 10:00 h	JE-ESCAPE27 T7 - CAPE Applications Addressing Global Grand Challenges Chairs: Prof. Juraj Kosek and Prof. Fabrizio Bezzo	JE-ESCAPE27 T4- Process Monitoring and Control Chairs: Prof. Costin Sorin Bildea and Prof. Sigurd Skogestad	TOPIC 5.2 Nanomaterials Preparation & Applications 1 Chairs: Valverde
	08:50 Waste-Energy-Water systems in sustainable city development using the resilience.io platform 2377 **Xiaonan Wang, Miao Guo, Koen H. van Dam, Rembrandt H.E.M. Koppelaar, Charalampos Triantafyllidis and Nilay Shah**	08:50 Nonlinear Dynamic Process Monitoring: The Case Study of a Multiphase Flow Facility 1495 **Ruomu Tan, Raphael T. Samuel and Yi Cao**	**OC-36936 Processing of Bioactive Scaffolds for Regenerative Medicine Using Compressed CO2 Technological Approaches** C. Garcia-Gonzalez, A. Salerno, L. Diaz-Gomez, C. Domingo, A. Concheiro, C. Alvarez-Lorenzo[1] Spain
	09:10 Pharmaceuticals Removal from Water Effluents by Adsorption in Activated Carbons Using Monte Carlo Simulations 2695 **Daniel Bahamon and Lourdes F. Vega**	09:10 Resource efficiency indicators usefulness for decision-making process of operators: refinery hydrogen network case study 1513 **Anibal Galan, César de Prada, Gloria Gutierrez, Daniel Sarabia, Rafael Gonzalez, Mikel Sola, Sergio Marmol and Carlos Pascual**	**OC-72506 Synthesis of antibacterial coating using Chitosan/ Polyethylene glycol and silver nanoparticles and investigation of their antibacterial property as well as of nanoparticles mediated from Pyrus seeds** S. Qureyshi Pakistan
	09:30 A computer-aided socio-technical analysis on national and regional energy systems considering local availability of renewable resources 2485 **Yasunori Kikuchi, Miwa Nakai, Kazutake Oosawa, Yuichiro Kanematsu, Kotaro Ouchida and Tatsuya Okubo**	09:30 A Hierarchical Aggregation Concept for Resource Efficiency in Continuous Production Complexes 1519 **Benedikt Beisheim, Stefan Krämer and Sebastian Engell**	**OC-77991 Bromelain Encapsulation In Chitosan Nanoparticles** J. Artem Ataide, E. Favero Gerios, F. Mazon Bissaco, A. Faustino Jozala, L. de Oliveira Nascimento, P. Gava Mazzola[2] Brazil
			OC-56476 Development of large-capacity DDS carriers releasing by heat for industrial process Y. Noguchi, S. Fujioka, K. Terasaka Japan
			OC-93511 Optimizing Nanoparticle Synthesis via Flow Chemistry M. Besenhard, A. LaGrow, N. Thanh, A. Gavriilidis[1] United Kingdom

	ROOM C6	ROOM C7	ROOM C8
08:30 - 10:00 h	ICOSSE 3 Sustainable Technologies 1 Chair: Jawahir, Simons	JE- Process Safety- Cases Studies & Lessons Learnt 7 Chair: Hans Pasman	TOPIC 7.6-Clean Energy Processes & New Energy Vectors 4 Chair: Albadarin, Rodriguez-Chueca
	OC-67431Life Cycle Assessment of high-temperature carbonate loop for CO2 capture in the Czech Republic K.Zakuciova, A. Carvalho, V.Kočí	**KN-34361 Using case studies in risk analysis education** E. Pastor, E. Planas, J. Casal Spain	**OC-40541 Comparative Life Cycle Assessment For Traditional Grid-Connected High Pressure Sodium And Solar Stand-Alone Led Streetlight Systems: A Case Study For Rural Areas In Lebanon.** S. Tannous, R. Manneh, H. Harajili, H. El Zakhem[1] Lebanon
	OC-79311 Handling multi-scale/multi-partner information for biorefinery modelling, integration and sustainability assessment M.Janssen , E. Svensson, S. Papadokonstantakis	**OC-89456 Analysis of accident scenarios in the use of LNG as a ship fuel** T. Iannaccone, G. Scarponi, G. Landucci, M. Pontiggia, V. Cozzani[1] Italy	**OC-37426 Operational Performance of Small Scale Ammonia Converters for Power-to-Ammonia** I. Cheema, U. Krewer Germany
	OC-63566 Multi-objective optimization of fermentation and in situ gas stripping processes based on time-dependent fermentation models K. Darkwah, B. Knutson, J. Seay United States of America	**OC-36136 CFD study on the 20 Liters Sphere test, nozzle variation and its influence on a hybrid dispersion** A. Pinilla, D. Torrado, C. Murillo, M. Amin, F. Muñoz, N. Ratkovich, O. Dufaud[2] Colombia	**OC-35776 Impact of coke interspersed combustion stages in the yield towards high purity hydrogen by Steam-Iron Process** J. LACHÉN, J. PEÑA, J. HERGUIDO Spain
	OC- 88881 Algae as an Animal Feed Supplement: Nutrient Recovery and Water Reuse S. Hiibel, M. Reza, A. Faciola, C. Coronella1 United States of America	**OC-75256 Failure is Avoidable: Beware of Cost Saving Equipment Design Changes** M. Taube, United States of America	**OC-25301 Experimental multicycle sorption enhanced steam methane reforming by Ni-CaO-mayenite materials** A. Di Giuliano, C. Courson, P. Foscolo, K. Gallucci[1] Italy
	OC- 99821 Sustainable Material Applications and Reuse in Treatment (SMART) of Water and Environment I. Chowdhury	**OC-79911 Implementation Of Dynamic Simulation To Study The Consequences Of Deviations Along A Complex Process** C. Murillo, N. Olivier-Maget, N. Gabas France	**OC-23381 Developement of A Single Cell Molten Carbonate Fuel Cell System.** G. özkan, S. Gemici, G. Özkan[3] Turkey

	ROOM C6 (Cont.)	ROOM C7 (Cont.)	ROOM C8 (Cont.)
08:30 - 10:00 h	ICOSSE 3 Sustainable Technologies 1 Chair: Jawahir, Simons	JE- Process Safety- Cases Studies & Lessons Learnt 7 Chair: Hans Pasman	TOPIC 7.6-Clean Energy Processes & New Energy Vectors 4 Chair: Albadarin, Rodriguez-Chueca
	OC- 27146PEI-aided dispersion of Ni nanoparticles in mesoporous silica for dry reforming of methane D. Kang, H. Lim, J. Lee, Korea, South		**OC-20521 Ti-containing hierarchical Beta with highly active sites for deep desulfurization of fuels under mild conditions** Y. Sun China PR

	ROOM D1	ROOM D2	ROOM D3
08:30 - 10:00 h	JE-ESCAPE27 T1- Modeling and Simulation Chairs: Prof. Michael Fairweather and Prof. Paul Serban Agachi	E-ESCAPE27 T6 - Concepts, Methods and Tools Chairs: Dr. Franjo Cecelja and Prof. Tony Kiss	TOPIC 5.1 Fundamentals. Chairs: Bröckel, Kaufmann
	08:30 Numerical simulation of fixed bed for CO2 capture in a fossil fuel emission points by Pressure Swing Adsorption System 415 **Angel Gutierrez-Ortega, Joaquín Menacho, Rafael Gonzalez-Olmos, Rosa Nomen and Julià Sempere**	08:30 Optimal sensor placement strategies for large scale systems 2107 **Bala Shyamala Balaji and Sridharakumar Narasimhan**	**KN-25141** **Chemical Product Design & Engineering: An Industrial Survey** J. Uhlemann, R. Costa, U. Bröckel, S. Kaufmann, G. Moggridge, P. Saraiva, G. Wagner, J. Charpentier, M. Kind, T. Stelzer, E. Tsotsas Germany
	08:50 Mathematical Modelling of Intensified Extraction for Spent Nuclear Fuel Reprocessing 355 **Davide Bascone, Panagiota Angeli and Eric S. Fraga**	08:50 Global Identification of Kinetic Parameters via the Extent-based Incremental Approach 2119 **Diogo Rodrigues, Julien Billeter and Dominique Bonvin**	**OC-25221 Chemical Product Design & Engineering: An Academic Survey** R. Costa, J. Uhlemann, U. Bröckel, S. Kaufmann, G. Moggridge, P. Saraiva, G. Wagner, J. Charpentier, M. Kind, T. Stelzer, E. Tsotsas Portugal
	09:10 Modelling of Aerogels Structures Using Intelligent System «AeroGen Structure» 469 **Igor Mitrofanov, Irina Malysheva, Andrey Kolnoochenko and Natalia Menshutina**	09:10 A center-cut algorithm for solving convex mixed-integer nonlinear programming problems 2131 **Jan Kronqvist, Andreas Lundell and Tapio Westerlund**	**OC-37371 Decision making methodology for the design of emulsion-type chemical products during early design stages** J. Serna, P. Narváez Rincón, V. Boly, V. Falk Colombia
	09:30 Sequential Multi-Scale Modelling Concepts Applied to the Polyurethane Foaming Process 487 **Sigve Karolius, Heinz A. Preisig and Henrik Rusche**	09:30 SHOT – A global solver for convex MINLP in Wolfram Mathematica 2137 **Andreas Lundell, Jan Kronqvist and Tapio Westerlund**	**OC-24266 Development of a Systematic Methodology for Chemical Substitution using a Model-based Approach** S. Jhamb, X. Liang, A. Hukkerikar, K. Johansen, R. Gani, Denmark
			OC-Section winner

	ROOM D4	ROOM D5	ROOM D6
08:30 - 10:00 h	TOPIC 2 Intensification Chair: Brunazzi, Sorensen	JE-PARMAT Fluidization Chair: Tsotsas, Poletto	TOPIC 1-Curriculum Development and Transformation Chair: Foo, Shallcross
	OC-27061 Synthesis of Energy Efficient Distillation Configurations and New Dividing Wall Columns R. Agrawal United States of America	**KN-49681 Particle Dynamics in Gas and Liquid** H. Kalman, Israel	**KN-35836 Efficient Use of Operator Training Simulators in Academic Education and Training** V. Hass, H. Schneider, R. Hirschmann, R. Pörtner, F. Baganz Germany
	OC-31976 Modeling depth of distillation processes in packed columns: model discrimination T. Waltermann, R. Benfer, C. Knoesche, A. Gorak, M. Skiborowski, S. Schlueter Germany	**OC-66411 Fluidized bed rheology for granular media** D. Schütz, E. Riedl, A. Kottlan, K. Hartmann Austria	**OC-69996 Open Laboratory and design project in teams, for first year Chemical Engineering students at URV. Fuel for automobiles and car competition.** R. Garcia-Valls Universitat Rovira i Virgili, Spain
	OC-34801 Performance comparison of different pressure drop, hold-up and flooding point correlations for packed columns V. Wolf-Zoellner, F. Seibert, M. Lehner1 Austria	**OC-67136 Numerical study of regime transitions in a fluidized bed** C. Antonucci, L. Borzone Chile	**OC-64461 Graduate Student and Faculty Development in Teaching and Learning at the University of Alberta** S. Kresta, R. Polziehn, D. Davis, H. Zwicker Canada
	OC-45426 Steady state operation of a novel horizontal diabatic distillation system M. Larsen, J. Abildskov, J. Huusom, Denmark	**OC-51896 Process Dynamics Of Continuous Fluidised Bed Layering Granulation** A. Bück, M. Schmidt, C. Neugebauer, S. Palis, A. Kienle, S. Heinrich, E. Tsotsas Germany	**OC-29366 Teaching Efficiency: from Chemical Engineering to wider subject areas** J. Glassey, N. Kockmann, A. Porjazoska Kujundziski, M. Polakovic, L. Madeira, E. Schaer United Kingdom
	OC-62961 Control of an extractive distillation system with mixed-solvents as separating agent J. Jaime Fonseca, G. Rodríguez Niño, I. Gil Cháves Colombia	**SOC-83406 Multi-Zone & Multi-Compartment Model For Dynamic Simulation Of Horizontal Fluidized Bed Granulator** K. Meyer, A. Bück, E. Tsotsas, S. Heinrich Germany	**SOC-20646 Exploring the social and economic factors that affect scholarly performance in Chemical Engineering students** K. Osman South Africa

	ROOM D4 (Cont.)	ROOM D5 (Cont.)	ROOM D6 (Cont.)
08:30 - 10:00 h	TOPIC 2 Intensification Chair: Brunazzi, Sorensen	JE-PARMAT Fluidization Chair: Tsotsas, Poletto	TOPIC 1-Curriculum Development and Transformation Chair: Foo, Shallcross
	OC-72016 High Energy Saving by Commercially Operated Heat Integrated Distillation Column with New Heat Integration Arrangement T. Wakabayashi, S. Hasebe Japan	**SOC-86181 The role of granular rheology in structuring bubble flow in gas-solid fluidized beds** K. Wu, V. Francia, L. De Martín, M. Coppens United Kingdom	**SOC-69836 Influence of the technical and social competencies in team performance in the framework of project-based activities** J. Bonet Avalos, F. Suñé Spain
		SOC-37131 Analysis of the defluidization behaviour of industrial reactive powders at high temperature D. Macri, M. Poletto, D. Barletta, P. Lattieri United Kingdom	**SOC-24626 Problem Based Learning (PBL) in teaching of Chemical Engineering** P. Bustos-Gutiérrez, L. Reyes Núñez, J. Saavedra Molina, G. Reyes Torres Chile

	ROOM D7	ROOM E8
08:30 - 10:00 h	JE-AOPs-Heterogeneous Photocatalysis Chair: Dionysiou, Marugan	**AN INTRODUCTION TO** AceForm4.0 - A unique opportunity to influence EU funding for Innovation across the Formulating Industries
	OC-88196 Coupling of sulfate-radical generating oxidants with TiO2 photocatalysis for the degradation of hepatotoxic cyanotoxins M. Antoniou, I. Boraei, D. Pantelide, M. Abhishek, C. Edwards, L. Lawton Cyprus	

	ROOM D7 (Cont.)	ROOM E8 (Cont.)
08:30 - 10:00 h	JE-AOPs-Heterogeneous Photocatalysis Chair: Dionysiou, Marugan	**AN INTRODUCTION TO** AceForm4.0 - A unique opportunity to influence EU funding for Innovation across the Formulating Industries
	OC-80841 Localization of Thermalized Photogenerated Electrons and Holes in Anatase Nanoparticles A. Vorontsov, P. Smirniotis Russia	
	OC-70526 Treatment of Emerging Contaminants by UV/ H2O2 in Water Reuse Applications Y.Huang, Y. Liu, W.Abdelraheem, K. H. Cochran ,S. Coffin,Genbo Xu, Susan D. Richardson, D, Schlenk, D.D. Dionysiou	
	OC-41231 Simulation of solar photocatalytic reactors under natural and simulated solar light C. Casado, A. García-Gil, R. van Grieken, J. Marugán, Spain	
	SOC-87491 Cyanotoxins degradation by using Advanced Oxidation Processes M. Kong, X. Duan, D. Dionysiou United States of America	
	SOC-80046 Solar photocatalytic oxidation of atrazine on a horizontal cpc reactor V. Trejo Arredondo, Y. Vargas Rodríguez, R. Almanza S, J. Morales Mejía Mexico	

	ROOM D7 (Cont.)	ROOM E8 (Cont.)
08:30 - 10:00 h	JE-AOPs-Heterogeneous Photocatalysis Chair: Dionysiou, Marugan	**AN INTRODUCTION TO** AceForm4.0 - A unique opportunity to influence EU funding for Innovation across the Formulating Industries
	SOC-89506 TIO2-Immobilization Methods For The Photocatalytic Removal Of Arsenic. Effect Of N-Zvi Addition M. López-Muñoz, J. Raez Tajuelo, A. Arencibia Villagra, Y. Segura Urraca, J. Arsuaga Ferreras Spain	
	SOC-90836 TiO2-modified-diatomite composite catalyst for improved photodegradation of micropollutants in water combining various advanced oxidation processes E. Duran, J. Llobet Costa Rica	
	SOC-96831 Impact of tungsten doping on phase transition of photocatalytic TiO2 C. Byrne, D. Hermosilla, N. Merayo, Blanco, S. Hinder, S. Pillai Ireland	
	SOC-41676 Statistical Optimization Of Solar Photocatalytic Elimination Of Total Organic Carbon From A Real Industrial Wastewater M. Mueses, J. Colina-Márquez, F. Machuca-Martínez Colombia	

	MAIN AUDITORIUM
10:00 – 11:00h	PLENARY SESSION "Engineering Strategies for a Growing World: TR experience" **Miguel Paradinas** DEPUTY CEO, Técnicas Reunidas
11:00 – 11:30h	Coffe - Posters

	ROOM A2	ROOM A3	ROOM A4
11:30 – 13:00 h	TOPIC 6 Downstream Processing 1 R. Aires Barros, M. Ottens	TOPIC 3 Kinetics & Catalysis 5 Chairs: Duchateau, Schomäcker	JE- Process Safety-Cases Studies & Lessons Learnt 4 Chair: Mike Snyder
	OC-25376 Integrated optimization of purification processes for biopharmaceuticals S. Pirrung, C. Berends, M. Pons Royo, L. van der Wielen, R. van Beckhoven, M. Eppink, M. Ottens Netherlands	**OC-59221 DYNAMIC MODELLING OF ACETYLENE HYDROGENATION OF THREE REACTORS** B. Rijo, F. Lemos, I. Fonseca, A. Vilelas Portugal	**KN_ 21481 Process Safety Incident Reduction Initiative and catalogue of successfull practises at BASF** H. Schwarz Germany
	OC-46016 3D structure of protein precipitates, fractal dimension and influence of batch and continuous precipitation on the 3D structure P. Satzer, D. Burgstaller, A. Jungbauer Austria	**OC-46481 Cationization of cellulosic fibers: kinetics and influential factors** R. Aguado, A. Lourenço, A. Moral, P. Ferreira, A. Tijero Spain	**OC-60021 Process Safety Lost in Silos: A Case Study of HDPE Silo Explosion in Yeosu, Korea** C. Son, S. Park, Y. Koirala, M. Mannan United States of America
	OC-80471 Phage purification using polymeric ionic liquids as new chromatographic matrices M. Jacinto, I. Marrucho, J. Gonçalves, R. Willson, A. Azevedo, R. Aires Barros Portugal	**OC-80666 A MECHANISITIC KINETIC MODEL FOR SCALING UP MTO FLUIDIZED BED REACTOR** X. Yuan, H. Li, M. Gao, M. Ye, Z. Liu China PR	**OC-97691 Risk assessment of H2S release in a non-process area using CFD and evacuation models** A. Ashraf, C. Argyropoulos, L. Vechot, K. Kakosimos Qatar, Qatar
	OC-55926 An ABC strategy for protein purification: the proof-of-concept of magnetic crystallization R. dos Santos, M. Romão, A. Carvalho, A. Afonso Roque Portugal	**OC-77546 Kinetics of Melt Transesterification of Bisphenol-A and Diphenyl Carbonate to Polycarbonate with Tetraethyl Ammonium Hydroxide as Catalyst** Z. Xi, F. Bi, L. Zhao China PR	**OC-36211 Should "All" small incidents be investigated?** S. Sachdeva, M. Munsil, R. Weber United States of America
	OC-31751 A Solvent Free Process for the purification of a Biopolymer produced by Fermentation Process S. Daly, A. Fathi, I. Manavi Tehrani, B. Bahramian, P. Valtchev, J. Kavanagh, F. Dehghani, S. Naficy Australia	**OC-57256 The study of the kinetics of liquid-phase hydrogenation of nitrobenzene in the presence of ruthenium catalyst** E. Sulman, Y. Lugovoy, A. Filatova, S. Mikhailov, A. Sulman, V. Doluda Russia	**OC-62516 Multi-Criteria Optimisation of the Emergency Shut-Down Valves Allocation in Long Hydrocarbon Pipelines** S. Martynov, A. Sacconi, H. Mahgerefteh, S. Brown United Kingdom
	OC-62441 How peptidomimetics support downstream processing A. Roque, A. Pina, R. dos Santos Portugal	**OC-72071 Overall kinetic model for cyclohexanone oxime production using hydroxyl amine salt in two liquid phases.** D. Lorenzo, A. Santos, A. Romero Spain	

	ROOM A5	ROOM B1	ROOM B2
11:30 – 13:00 h	JE-IPIC Hybrid process and multifunctional process 1 Chairs: Gorak, Mato	TOPIC 6.5 Biorefineries 2 Chairs: M.Cuella Soares, L.Wielen	JE-LIGNOCELLULOSIC Thermo-Conversion & Bioenergy 2 Chairs: Berg, Turrado
	KN-61761 Methane conversion to ethylene in a nanosecond-pulsed discharge catalytic reactor M. Scapinello, E. Delikonstantis, G. Stefanidis Belgium	**OC-60701 Bioprocess design and techno-economic evaluation of succinic acid production using spent sulphite liquor as feedstock** D. Ladakis, I. Kookos, A. Koutinas, A. Vlysidis Greece	**KN-78086 Optimising the sustainability of the reforming of biomass-derived compounds via the by-product carbon nanotubes** J. Huang, Australia
	OC-47451 Pure hydrogen production from biogas: intensified methane dry reforming in a two-zone fluidized bed reactor using permselective membranes P. Durán, P. Ugarte, A. Sanz, J. Soler, M. Menéndez, J. Herguido Spain	**OC-31586 Raw material integration for the improvement of viability in biorefineries** C. Botero, V. Aristizábal, S. Serna, C. Cardona Colombia	**OC-42786 Ex-situ biomass catalytic pyrolysis to high quality bio-oil in pilot scale over novel ZSM-5 based nano-catalysts** E. Heracleous, K. Kalogiannis, H. Hernando, D. Serrano, T. Fakin, A. Horvat, A. Lappas Greece
	OC-92191 Simulation and optimization of an intensified hybrid system for seawater desalination: vacuum membrane distillation coupled with solar heating Q. MA, A. Ahmadi, C. Cabassud France	**OC-62011 Sustainability assessment for the production of microbial oil from food wastes** A. Vlysidis, S. Tsakona, N. Kopsahelis, I. Kookos, A. Koutinas1 Greece	**OC-36781 FCC of upgraded pyrolysis liquids mixed with crude oil distillates: strategies for improving bio-fuels quality and minimizing production costs** Y. Chapelliere, A. Tuel, Y. Schuurman, R. Venderbosch, E. Jordan, S. Wellach, C. Mirodatos France
	OC-29251 Design of Dividing-Wall Columns Accounting for Vapor Split Uncertainty C. Tsay, R. Pattison, M. Baldea United States of America	**OC-82156 Hydrothermal liquefaction of demineralized wastewater algae biomass** R. Carpio, Y. Zhang, C. Kuo, L. Schideman, R. de Leon Philippines	**OC-43596 Steam reforming of the producer gas obtained from the gasification of beech wood: scale up from laboratory benches to full-size demonstrator** J. Pieterse Netherlands
	SOC-58526 Process Intensification via Chemical Looping: Integrating Reaction & Separation for Next-Generation Fuel Processing Applications G. Veser, A. More, G. Ozbuyukkaya United States of America	**OC-87256 Second generation bioethanol production from the fermentation of mixtures of chilean lignocellulosic residues** A. Garcia, A. Tapia, R. Aravena, G. Javier, A. Rojas Chile	**OC-95696 Effect of γ-valerolactone on the hydrothermal conversion of biomass under acid-free conditions** B. Song, Y. Yu, H. Wu Australia

	ROOM A5 (Cont.)	ROOM B1 (Cont.)	ROOM B2 (Cont.)
11:30 – 13:00 h	JE-IPIC Hybrid process and multifunctional process 1 Chairs: Gorak, Mato	TOPIC 6.5 Biorefineries 2 Chairs: M.Cuella Soares, L.Wielen	JE-LIGNOCELLULOSIC Thermo-Conversion & Bioenergy 2 Chairs: Berg, Turrado
	SOC-26551 EXPERIMENTAL INVESTIGATION OF THE Ca-Cu PROCESS FOR HYDROGEN PRODUCTION AND CO2 CAPTURE M. Martini, F. Gallucci, M. van Sint Annaland Netherlands	**OC-53086 Anaerobic Digestion to produce renewable chemicals** D. Dionisi, I. Bolaji, I. Silva United Kingdom	**SOC-38261 Effect Of The Vinyl Group On The Reactivity Of Lignin H, G, S Units During Biomass Fast Pyrolysis** S. Gorugantu, D. Vargas, H. Carstensen, K. Van Geem, G. Marin Ghent University,
	SOC-20906 Design of a stand-alone combined heat and power system integrated with copper-chlorine (Cu-Cl) thermochemical cycles W. Wu, H. Chen Taiwan		**SOC-42261 Evaluation of diesel and biodiesel as solvents for upgrading liquefied bagasse bio-crude** J. Ramirez, R. Brown, T. Rainey Australia
	SOC-47596 Sustainable Epoxidation of Terpenes using Continuous Mesoscale Oscillatory Baffled Reactor under Microwave Irradiation A. Lopez Fernandez, M. Gunam Resul, A. Harvey United Kingdom		**SOC-42616 Production of High-Grade Carbonaceous Materials from Degradative Solvent Extraction of Biomass at 350oC Using 1-Methylnaphthalene and Petroleum Based Solvent** N. Worasuwannarak, S. Jadsadajerm, K. Miura Thailand

	ROOM B3	ROOM B4	ROOM C1
11:30 - 13:00 h	TOPIC 2 1 Thermo dynamics-Applications Chairs: Magee, Sarti	TOPIC 7.1-Resources Use & Sustainable Technologies 2 Chairs: Wolfson, Garcia-Calvo	JE-ESCAPE27T1- Modeling and Simulation Chairs: Prof. Gürkan Sin and Dr. Moisès Graells
	KN-97541 **Oil Desulfurization Using Deep Eutectic Solvents via Liquid-Liquid Extraction** C. Peters, S. Warrag, N. Rodríguez, M. van Sint Annaland, J. Siepmann, M. Kroon United Arab Emirates	**OC-83536 Tanning of leather without wastewater using compressed carbon dioxide. Technical and industrial scale overview** M. Renner Germany	**T1.- Modeling and Simulation** 11:50 Graybox Models - New Opportunities for the Optimization of Entire Processes 97 **Norbert Asprion, Roger Böttcher, Robert Pack, Marina-Eleni Stavrou, Johannes Höller, Jan Schwientek and Michael Bortz**

	ROOM B3 (Cont.)	ROOM B4 (Cont.)	ROOM C1 (Cont.)
11:30 - 13:00 h	TOPIC 2 1 Thermo dynamics-Applications Chairs: Magee, Sarti	TOPIC 7.1-Resources Use & Sustainable Technologies 2 Chairs: Wolfson, Garcia-Calvo	JE-ESCAPE27T1 Modeling and Simulation Chairs: Prof. Gürkan Sin and Dr. Moisès Graells
	OC-49996 Fluorinated ionic liquids: Novel task-specific biomaterials A. Pereiro, M. Ferreira, N. Vieira, J. Bastos, J. Araújo, L. Rebelo Portugal	**OC-74966 Comprehensive study of the reaction kinetics of the solventless production of solketal with sulphonic ion exchange resins** J. Esteban, M. Ladero, F. García-Ochoa United Kingdom	**T7.- CAPE applications addressing Global Grand Challenges** 12:10 Surrogate-based Optimization for Pharmaceutical Manufacturing Processes 2797 **Zilong Wang, M. Sebastian Escotet-Espinoza, Ravendra Singh and Marianthi Ierapetritou**
	OC-62996 The Different Faces of Aqueous Biphasic Systems in Protein Purification: From Poly(alkylene glycol) s to Nature-Inspired Ionic Fluids, and From Macroscale to Microscale S. Carvalho, J. Bastos, M. Ferreira, A. Pereiro, L. N. Rebelo, J. Araújo Portugal	**OC-73361 Life Cycle Assessment of transformation end-of-life RO membrane moduls alternatives into UF and NF membrane modules in pilot scale.** J. Senán Salinas, R. García-Pacheco, S. Mollina, J. Landaburu-Aguirre, E. García-Calvo Spain	12:50 How to Use mechanistic Metabolic Modeling to Ensure High Quality Glycoprotein Production 2839 **Alireza Ehsani, Sebastian Niedenfuehr, Thomas Eissing, Swantje Behnken and Andreas Schuppert**
	OC-66846 Thermodynamic modeling of fast pyrolysis bio-oil by group contribution S.Pereda, Y. Ille, F. Sánchez, N. Dahmen Argentina	**OC-71486 Hydrogen production from steam reforming of phenol as a coal pyrolysis product** X. Luo, C. Pang, T. Wu China PR	
	SOC-37226 Multiscale modelling of poly-ε-caprolactone in acetone-water mixture A. Lavino, P. Carbone, D. Marchisio Italy	**OC-61336 Can nitrogen removal be a win-win situation?** S. Longo, J. Lema, M. Mauricio Iglesias, A. Hospido Spain	
	SOC-59756 Development and validation of a predictive design model for single-phase multi-component supersonic ejector A. Esmaeili, H. Bashiri, Z. Aidoun Canada	**OC-58706 Strategies to meet carbon footprint reduction target for sustainable cement production** C. Pinheiro, R. Filipe, H. Matos Portugal	

	ROOM B3 (Cont.)	ROOM B4 (Cont.)	ROOM C1 (Cont.)
11:30 - 13:00 h	TOPIC 2 1 Thermo dynamics-Applications Chairs: Magee, Sarti	TOPIC 7.1-Resources Use & Sustainable Technologies 2 Chairs: Wolfson, Garcia-Calvo	JE-ESCAPE27T1 Modeling and Simulation Chairs: Prof. Gürkan Sin and Dr. Moisès Graells
		SOC- 97166 Clean to Clean: using paper waste to produce fermentable sugar for bioethanol production A. Arasteh nodeh, S.aghili Iran	

	ROOM C2	ROOM C3	ROOM C4
11:30 - 13:00 h	JE-ESCAPE27 T6.- Concepts,Methods and Tools Chairs: Prof. Ignacio Grossmann and Prof. Antonis Kokossis	TOPIC 5.5-Advanced Measurements and Characterization in FPD Chairs: R. Kohlus, U. Bröckel	SCEJ-ECAB Next Generation Downstream Processing of Biologics Chairs: S.Yamamoto, A. Jungbauer, A. Podgornik
	11:50 Using Semidefinite Programming to Calculate Bounds on Stochastic Chemical Kinetic Systems at Steady State 2239 **Garrett R. Dowdy and Paul I. Barton**	**OC-23661 Poroviscoelastic characterization of protein hydrogels with a novel micromanipulation rig** R. Mercade Prieto, W. Hu, X. Chen China PR	**OC-81541 Methods for improving the productivity of chromatography of proteins based on simple mechanistic models** S. Yamamoto, N. Yoshimoto Japan
	12:20 Multi-parametric programming based algorithms for the global solution of bi-level mixed-integer linear and quadratic programming problems 2125 **Efstratios N. Pistikopoulos and Styliani Avraamidou**	**OC-24246 Local and dynamic quantification of protein hydrogels undergoing swelling and dissolution in alkali using wide-field fluorescence** W. Liu, X. Chen, R. Mercadé-Prieto China PR	**OC-93361 Continuous DSP Strategies – nextBioPharmDSP** G. Hribar Slovenia
	12:50 From Ontology to Executable Program Code 2317 **Arne Tobias Elve and Heinz A. Preisig (Arne Tobias Elve)**	**OC-35146 Understanding of interaction between drop formation, polarity of surfactant and electrical field for the production of water in oil emulsion.** N. Kovalchuk, E. Jenkins, B. Harwood, C. Espinoza, M. Simmons, F. Alberini United Kingdom	**OC-91836 Downstream processing of proteins: does mechanical stress matter?** A. Jungbauer, M. Duerkop, E. Berger, A. Duerauer, Austria

	ROOM C2 (Cont.)	ROOM C3 (Cont.)	ROOM C4 (Cont.)
11:30 - 13:00 h	JE-ESCAPE27 T6.- Concepts, Methods and Tools Chairs: Prof. Ignacio Grossmann and Prof. Antonis Kokossis	TOPIC 5.5-Advanced Measurements and Characterization in FPD Chairs: R. Kohlus, U. Bröckel	SCEJ-ECAB Next Generation Downstream Processing of Biologics Chairs: S.Yamamoto, A. Jungbauer, A. Podgornik
		OC-45621 Study of the oxidation of an omega-3 concentrate after formulation as oil in water emulsions E. de Paz, null Benito, García Solaesa, R. Melgosa, M. Sanz, S. Beltrán Spain	**OC-74371 The potential of the combinations of high capacity affinity resins with new mixed mode resins** E. Müller, J. Vajda Germany
		OC-54991 X-ray micro-tomography and enhancement methods to study food structure S. Chevallier, P. Jha, A. Le-Bail, O. Rouaud, V. Jury France	**SOC-81556 Understanding the retention of proteins in ion exchange chromatography thermodynamically** J. Cardoso, N. Yoshimoto, S. Yamamoto Japan
		OC-64301 Physicochemical and thermal characterization of Jaggery production process during concentration step A. Alarcon Rodriguez, P. Narváez RIncón, A. Orjuela Londoño Colombia	**SOC-71556 Direct analysis of glycoforms of antibodies from cell culture with affinity resin coupling Fc Receptor IIIa** Y. Terao, N. Yamanaka, S. Endo, Y. Yamamoto, Y. Asaoka, S. Oe, T. Ide Japan
			SOC-79896 Effect of pressure drop model on estimated adsorbed layer thickness A. Podgornik, M. Andrejčič2 Slovenia
			SOC-81191 Characterization of microliter monolithic columns A. Podgornik, T. Lukan, S. Yamamoto Slovenia

	ROOM C5	ROOM C6	ROOM C7
11:30 - 13:00 h	TOPIC 5.2 Nanomaterials Preparation & Applications 2 Chairs: Besenhard, Rodriguez-Mirasol	ICOSSE 4 Sustainable technologies 2 Chair: Dufour, Darton	JE- Process Safety- Cases Studies & Lessons Learnt 8 Chair: Maria Papadaki
	OC-62541 A Pulse-assisted Fluidized Bed Chemical Vapor Deposition Method for Production of Electrically Improved Nanoparticles S. Aghaee Sarbarze, M. Latifi, J. Chaouki Canada	**OC- 24526 Implementing the Paris Agreement: key challenges and opportunities for chemical engineering** S. Simons, A. Howe2 United Kingdom	**KN-22096 Can we make use of the methodological commonality in accident investigation and hazard identification to enhance process safety?** H. Pasman, W. Rogers, S. Mannan United States of America
	OC-69561 Light-weight and heat-resistant porous silicon carbide ceramics with high electromagnetic interference shielding performance C. Liu, Y. Xu China PR	**OC- 51251 Economic and environmental assessment of bagasse utilization for ethanol production in India** Y. Shastri, V. Payala, P. Mandade1 India	**OC-37991 Effect of the particle clump shape and nozzle design on the degree of agglomeration and de-agglomeration in the 20L explosion sphere using CFD-DEM tools.** M. Amin, A. Pinilla, F. Muñoz, N. Ratkovich, C. Murillo, D. Torrado, O. Dufaud Colombia
	OC-90971 Modeling & Characterization of Metal Hexaborides Materials: Potential Applications in the Hydrogen Industry V. VASQUEZ, K. Schmidt, O. Graeve2 United States of America	**OC- 51101 A high pressure jet device as a novel technology for reduction of excess activated sludge: Performance, mechanism and cost estimation** M. Hosomi, H. Yoshino, S. Riya, L. Xie, A. Terada Japan	**OC-28846 Estimating the flammability of liquid mixtures using QSPR models** G. FAYET, T. GAUDIN, P. ROTUREAU, France
	OC-43286 Hierarchical Hollow ZSM-5 with Silicon-rich Surface and Encapsulated Iron as Catalysts A. Zhang, C. Dai China PR	**OC-88561 Towards a more sustainable management of desalination brines** M. Herrero, A. Dominguez-Ramos, R. Ibañez, A. Irabien Spain	**OC-32166 Estimation of the deflagration index as a function of the dust particle size** S. Copelli, A. Fumagalli, M. Derudi, R. Rota Italy
	OC-36511 Metal thin film formation at liquid-liquid interface using electroless plating Y. Yohaze, T. Tsuneyoshi, T. Watanabe, T. Ono Japan	**OC-50221 Energy and water mitigation strategies in the South African commercial meat sector** V. Russo, H. von Blottnitz	**OC-65661 Leading Process Safety Metric's - ISC Journey** S. Fogarty Australia
	OC-36231 Synthesis of Mg–Al layered double hydroxides by electrocoagulation M. Molano, D. Donneys-Victoria, F. Machuca-Martínez, N. Marriaga-Cabrales Colombia		

	ROOM C8	ROOM D1	ROOM D2
11:30 - 13:00 h	TOPIC 7.3 Water Management & Treatments 4 Chair: Cho Jaehoon, Lombrana	PhD Workshop Launching a Spin-off Round Table	TOPIC 3 Microreactors 1 Chair: Dittmeyer, Chen
	OC-63436 Anaerobic Microorganisms are Capable of Reducing Antimony(V) to Antimony(III) E. Regidor-Alfageme, I. Moreno-Andrade, J. Field, R. Sierra-Alvarez United States of America		**OC-61361 Exploitation of additive manufacturing for the realisation of metallic micro-/milli-structured reactors** P. Löb, C. Hofmann, U. Krtschil, G. Menges-Flanagan Germany
	OC-60166 Study of single and competitive adsorption of methyl and propylparaben from water by activated carbon Pulsorb PWX HA M. Bernal-Romero del Hombre Bueno, N. Boluda-Botella, C. Martínez-Cantos, D. Prats, Spain		**OC-86941 Effects of process parameters on the stability of a highly concentrated emulsion in a microchannel** C. Malafosse, J. Blanco, N. Le Sauze, K. Loubière, J. Ollagnier, H. Rolland, A. Pierre, L. Prat France
	OC-60116 A new efficient reducing Soft Structured Catalytic Support for chemical reduction of Methylene blue in wastewater L. Lefebvre, L. Jierry, V. Ritleng, D. Edouard, France		**OC-85721 Design of a microstructured reactor for a single step methanol-to-hydrocarbons process** E. Rebrov, J. Fernández, V. Doluda, G. Hu, U.K.
	OC-58231 A systemic approach to optimize the implementation of a new disinfection process for spa water treatment M. Tartanson, L. Soussan, M. Rivallin, C. Faur, IEM, France		**OC-28081 Design methodology of micro-jet mixers for various applications** S. Asano, S. Yamada, T. Maki, K. Mae Japan
	OC-29776 Treatment of oily industrial effluents using health-friendly synthesized cationic flocculants A. Lourenço, J. Arnold, O. Cayre, M. Rasteiro Switzerland		**OC-37026 Cultivation and biotransformation at the microscale: intensification of oxygen mass transfer and mixing in multiphase microreactors** S. Lladó Maldonado, J. Krull, R. Heydorn, D. Valikhani, D. Rasch, B. Nidetzky, J. Bolivar, R. Krull, Germany
	OC-24866 Pilot Scale Production Of Tannin-Based Coagulants For Wastewater Treatment K. Grenda, J. Arnold, D. Hunkeler, J. Gamelas, O. Cayre, M. Rasteiro Portugal		**OC-50506 Local Gas-Liquid Mass Transfer and Selectivity Visualization in Straight and Helically Coiled Capillaries** W. Krieger, S. Kurt, E. Bayraktar, O. Mierka, S. Turek, N. Kockmann Germany
	OC-57026 SMS: Separation of Micropollutants at Source - Improvement of micropollutants treatment and nutrients recovery by source separation of urine C. Albasi, L. Cavaille, Y. Bessiere, A.mottier, F.mouchet, B.savart, O.lorain, O. Delrieu, M. Rhouma, J. Depasse		**OC- 57631: Experimental and Modelling Study of Chiral Separation in Slug Flow Microreactors** Susanti, T.Meinds, E.Pinxterhuis, B. Schuur, J. de Vries, B. Feringa, J. Winkelman, J. Yue, H. Heeres
	OC-55981 Efficiency of an in situ pilot-scale hybrid membrane bioreactor (MBR) for hospital effluent treatment Claire Albasi, D. Lachassagne, L. Mouret, H.budzinski, O.lorain, J.philippe , S. Jeandenand		

	ROOM D3	ROOM D4	ROOM D5
11:30 - 13:00 h	TOPIC 5.1 Modelling & Eng. Chairs: Uhlemann, Bröckel	TOPIC 2 Extraction Chair: Argrawal, Fele	JE-PARMAT-Flow of Particulate Systems Chair: Kalman, Schütz
	KN-74986 MoDeNa - A computational platform to simulate from quantum to macroscopic mechanical product properties H. Preisig, S. Pricl, M. Fermeglia, A. Daiss, B. Eling, D. Marchisio, H. Rusche, P. Anderson, J. Llorca, J. Gross, J. Kosek, P. Albrecht Norway	**OC-27001 Extraction of thiophenic sulfur compounds from model fuel using water based solvent** B. Saha, S. Sengupta India	**OC-96431 The investigation of consolidation on cement flow behaviour** D. Turki, M. Saidani Algeria
	OC-42606 Chemical Engineering Approach for Nano Materials -Supercritical Process for Nano catalyst, Hybrid Materials and Nano Ink- T. Adschiri Japan	**OC-55056 Computational and experimental techniques to describe a micro-extraction process with selective solvents** A. Basauri, J. Gómez-Pastora, M. Fallanza, E. Bringas, I. Ortiz Spain	**OC-32011 Assessment of powder flowability in pharmaceutical tableting** C. Hildebrandt, S. Gopireddy, T. Profitlich, R. Scherließ, N. Urbanetz Germany
	OC-24191 Structural modification and enhanced nutritional value of aquafeed pellets from improved starch functionalization M. Laporte, C. Ernst, E. Windhab, N. Müller-Fischer, I. Roberts Switzerland	**OC-58286 Effect of pulsed ultrasound assisted extraction upon cynaropicrin concentration: extraction optimization using response surface methodology** T. Bras, A. Paulino, L. Neves, J. Crespo, M. Duarte, Portugal	**OC-66871 Comparison of different flow assessments for Selective Laser Sintering powders** E. Riedl, K. Hartmann, D. Schütz Austria
	OC-82831 A multi-scale modeling framework to predict membrane fouling during protein ultrafiltration S. Curcio, F. Petrosino, G. De Luca Italy	**OC-74386 Novel Solid Extraction Separation Based on structural interface property regulation and Their Applications in Bioseparation and Heavy Metal Ions Removal** China PR	**OC-89921 Direct approach to obtain the tensile stress in the reduced stress part of the flow function** G. Pablo, S. Zigan United Kingdom
	OC-42016 Modeling and simulation of mass transfer for Separation of biobutanol from fermentation solutions by perstraction using ionic liquid as receiving phase G. Merlet, M. Rodriguez, C. Araya, R. Cabezas, J. Romero Chile	**OC-89386 Intensification of lipid extraction from vegetable oilseeds assisted by pulsed electric fields** I. Saykova, I. Iatcheva Bulgaria	**OC-33991 Powder flowability: are standard assessment methods predictive?** A. Saker, P. Marchal, V. Falk France
		OC-43666 Hydrodynamics and mass transfer performance of miniaturized, stirred-pulsed extraction columns S. Soboll, N. Kockmann Germany	**SOC-77721 Improving the Particle Flow in liquid solid Extraction Tower by Insert Structure Optimization: A Combined Study of Experiments and DEM Simulations** Z. Xi, C. Qin, L. Zhao, China PR

	ROOM D3 (Cont.)	ROOM D4 (Cont.)	ROOM D5 (Cont.)
11:30 - 13:00 h	TOPIC 5.1 Modelling & Eng. Chairs: Uhlemann, Bröckel	TOPIC 2 Extraction Chair: Argrawal, Fele	JE-PARMAT-Flow of Particulate Systems Chair: Kalman, Schütz
		OC- 12656 Design of cryogenic air separation units for transition responsiveness C. Swartz, R.Jaydeep, Y.Cao, J.Flores-Cerrillo	**SOC-61461 Powder Flow Characterization at Low Consolidation: Modeling and Experimental Values of Preshear and Shear Sequences** H. Salehi, D. Schütz, D. Barletta, M. Poletto Italy
		OC- 45856 Extraction of Allyl Isothiocyanate from Wasabi (Wasabia japonica Matsum.) Leaf Powder by Supercritical Carbon Dioxide R. Hsu, J. Li, Chen Taiwan	**SOC-36996 How to improve classical powder flowability tests to meet current requirements of industries** G. Lumay Belgium

	ROOM D6	ROOM D7	ROOM E8
11:30 - 13:00 h	TOPIC 1 Curriculum Development & e-Learning Chair: D. Shallcross, C.Monte	JE-ESCAPE27 T5. - Integrated/ Holistic Approaches Chairs: Prof. Xavier Joulia and Prof. Sandro Macchietto	**An Introduction to AceForm.4.0** - A Unique opportunity to influence EU funding for Innovation across the Formulating Industries
	KN-71506 **Chemical engineering education in the digital age** M. DEBACQ France	11:50 Screening of Solvents for CO2 Capture considering Sustainability Criteria via Data Envelopment Analysis 2011 **Phantisa Limleamthong, María González-Miquel, Stavros Papadokonstantakis, Athanasios I. Papadopoulos, Panos Seferlis and Gonzalo Guillén-Gosálbez**	
	OC-90786 Supporting computational tools via e-learning across the curriculum E. Sorensen, M. Molaei Chalchooghi United Kingdom	12:20 Life Cycle Optimisation from a Noncooperative Perspective: Game Theory-Based Models and Applications 1915 **Jiyao Gao and Fengqi You**	

	ROOM D6 (Cont.)	ROOM D7 (Cont.)	ROOM E8 (Cont.)
11:30 - 13:00 h	TOPIC 1 Curriculum Development & e-Learning Chair: D. Shallcross, C.Monte	JE-ESCAPE27 T5. - Integrated/ Holistic Approaches Chairs: Prof. Xavier Joulia and Prof. Sandro Macchietto	**An Introduction to AceForm.4.0** - A Unique opportunity to influence EU funding for Innovation across the Formulating Industries
	OC-71381 Turning training into competency through expertise, technology and modern pedagogy R. Muñoz Spain	**T2.- Synthesis and Design** 12:50 Methodology for biomass blending for the production of power and fuels from biogas 667 **Borja Hernández, Erick León and Mariano Martín**	
	OC-76671 Developing process simulation competencies effectively and coherently in undergraduate programmes D. Belton United Kingdom		
	SOC-7371 Additive manufacturing revolution to reactor engineering C. Grande Norway		
	SOC-85961 Framework based on concepts related to digital factory 4.0 for better Education purposes J. Lann, S. Negny, K. Alloula, J. Belaud France		
	SOC-54851 Integrating the UN Global Sustainable Development Goals in the Program Outcomes of the ChE Curriculum at the University of Santo Tomas, Manila E. Laurito Philippines		

13:00 -14:30h LUNCH

	MAIN AUDITORIUM
14:30 - 15:30 h	PLENARY SESSION "Bio-responsive hybrid materials for regenerative medicine and biosensing" **Molly Stevens.** Department of Bioengineering, Imperial College London, UK

	ROOM C1	ROOM C6	
14:30 - 15:30 h	**PLENARY ESCAPE** Robin Smith: "Process Integration: Current Status and Future Challenges" Manchester University, Manchester, UK	**PLENARY ICOSSE** Climate Change Science, the Paris Agreement and the Sustainable Development Goals R. Christ	
15:30 – 16:00h	Coffee - Posters		
	ROOM A2	**ROOM A3**	**ROOM A4**
16:00 - 17:30 h	TOPIC 6 Downstream Processing 2 Chairs: R. Aires Barros. M. Ottens	TOPIC 3 Kinetics & Catalysis 6 Chair: Van Sint Annaland, Von Rohr	JE- Process Safety-Cases Studies & Lessons Learnt 5 Chair: Andre Laurent
	OC-30736 Modelling approach to estimate the geometry of microalgal flocs. P. López Expósito Spain	**OC-54761 Kinetic study of the degradation of methanol with nickel catalyst in a capillary heat loop: an innovative test bench** J. Renault, S. Sochard, V. Platel, S. Nicolau, M. Mohaupt, P. Lasserre France	**KN-91326 Closing the Gap Between Process Safety and Structural Engineers For Safer and Cost-Effective Design** A. Sali
	OC-39616 Miniaturization of Bioprocesses for Biopharmaceuticals Purification using Microfluidic Devices R. Aires-Barros, A. Azevedo Portugal	**OC-55511 Kinetic study of combustion and pyrolysis of light crude oil and its SARA fractions in presence of initiators, catalysts and rocks** M. Varfolomeev, D. Emelianov, S. Mehrabi-Kalajahi, M. Abaas Russia	**KN-91316 Blast Consideration for Safer Building Design in Petrochemical Facilities** A. Sari Turkey
	OC-48241 Miniaturization for biopurification process development M. Ottens Netherlands	**OC-50931 Kinetic model of the acetalization reaction between glycerol and acetone to produce solketal. Validation in a continuous flow process.** A. Cornejo Fernández-Gao, I. Barrio, M. Campoy Naranjo, J. Lázaro Muñoz, B. Navarrete Rubia Spain	**OC-68841 Lessons learnt from recent incident investigations initiated by unusual causes: Boil-over, Shock-wave, Electrostatic sources** H. Vaudrey France

	ROOM A2 (Cont.)	ROOM A3 (Cont.)	ROOM A4 (Cont.)
16:00 - 17:30 h	TOPIC 6 Downstream Processing 2 Chairs: R. Aires Barros. M. Ottens	TOPIC 3 Kinetics & Catalysis 6 Chair: Van Sint Annaland, Von Rohr	JE- Process Safety-Cases Studies & Lessons Learnt 5 Chair: Andre Laurent
	OC-89766 New chromatographic supports for IgG purification E. Lalli, C. Boi, Italy	**OC-24446 Kinetic model for solubilized biomass hydrolysis with supercritical and subcritical water** A. Cabeza, C. Piqueras, J. Garcia-Serna Spain	**OC-88971 Multiscale approach of consequence modeling using engineering models: example of Boilover** D. Laboureur, E. Lapébie, J. Buchlin Belgium
	OC-44421 Real-time monitoring of purity, quantity and potency of fibroblast growth factor-2 during chromatographic processes D. Sauer Austria	**OC-32386 Kinetic and mechanistic study of glycerol hydrodeoxygenation under inert conditions, over Cu-based catalyst** V. Yfanti, D. Ipsakis, E. Vasiliadou, A. Lemonidou Greece	**OC-73121 A statistical analysis of university lab accidents in China** Y. Liu, X. Wang, D. Zhao, China PR
	OC-46411 Phenolic compounds from Scirpus holoschoenus. Optimization of extraction, antioxidant in vitro and in food model S. Oussaid, K. Madani, K. Houali, M. Rendueles de la Vega, M. Diaz Spain	**OC-42526 The kinetic investigation of oil saturates high pressure oxidation, aromatics and crashed rock effects** A. Ushakova, D. Emelyanov, V. Zatsepin, M. Varfolomeev Russia	

	ROOM A5	ROOM B1	ROOM B2
16:00 - 17:30 h	JE-IPIC-Hybrid Process and Multifunctional Process 2 Chair: B. Calloway y F. Hernandez Fernandez	TOPIC 6.5 Bio-fuels Chairs: G. Ferreira, L.Wielen	16:00 - 17:45 h JE-LIGNOCELLULOSIC Thermo-Conversion & Bioenergy 3 Chairs: Gutiérrez, Rojas
	KN-22641 Exploring separation-enhanced methanation for power to substitute natural gas J. Boon, M. Sarić, E. van Dijk, F. van Berkel, Y. van Delft Netherlands	**OC-82666 Cost-effective CO2 conversion into chemicals via combination of Capture, Electrochemical and Biochemical conversion technologies** D. Fino, B. Mongili, S. Hernandez Italy	**KN-56116 BIOMASS CATALYTIC FAST-PYROLYSIS OVER MgO AND ZnO SUPPORTED ON HIERARCHICAL ZEOLITES** J. Fermoso, C. Ochoa-Hernández, P. Pizarro, J. Coronado, J. Čejka, H. Hernando, D. Serrano, I. Moreno Spain

	ROOM A5 (Cont.)	ROOM B1 (Cont.)	ROOM B2 (Cont.)
16:00 - 17:30 h	JE-IPIC-Hybrid Process and Multifunctional Process 2 Chair: B. Calloway y F. Hernandez Fernandez	TOPIC 6.5 Bio-fuels Chairs: G. Ferreira, L.Wielen	16:00 - 17:45 h JE-LIGNOCELLULOSIC Thermo-Conversion & Bioenergy 3 Chairs: Gutiérrez, Rojas
	OC-31141 Assesment of zeolite membranes for membrane reactors H. Kita, J. Lasobras, M. Menendez, J. Herguido, I. Kumakiri, J. Gorbe, M. Tovar Spain	**OC-47236 Sustainable production of next generation biofuels from waste streams: Waste2Fuels** M. Aguado, M. Alzueta, A. Basagiannis, E. Bayer, M. Brognoli, A. Fatjó Brugueras, R. Chirone, M. de La Feld, R. Diez Antolinez, P. Götz, A. Friedl, M. Landau, P. Lettieri, J. López Martínez, A. Marzocchella, H. Niebelschütz, A. Piscitelli, R. Roldan, P. Soucaille, B. Tiwari Italy	**OC-92611 Economic evaluation of biofuels production from lignocellulosic biomass** R. Roelant, E. Mera, W. Zhao Netherlands
	OC- "Industrial PI Award"		
	OC-33906 Steam reforming of biogas in a fluidized bed membrane reactor for the production of hydrogen N. de Nooijer, J. Melendez, E. Fernandez, D. Pacheco Tanaka, M. van Sint Annaland, F. Gallucci Netherlands	**OC-66766 Selective ethanol production and extraction using vacuum fermentation at high xylose concentration by Scheffersomyces stipitis** D. Farias, D. Atala, F. Maugeri Brazil	**OC-58436 A techno-economical analysis of biobutanol production integrated with pervaporation** W. Van Hecke, H. De Wever Belgium
	SOC-26506 Heat Pipe Screw Dryer: a novel, energy-efficient drying technology A. Mustaffar, K. Boodhoo, A. Phan United Kingdom	**OC-28901 Energy and exergy analysis of ethanol production from sugarcane bagasse and cassava.** D. Restrepo Serna, C. Cardona Alzate Colombia	**OC-52491 BIO-GO: Conversion of Bio Gas and Pyrolysis Oil to Synthetic Fuels through reforming, methanol synthesis and MTG processes operated in a miniplant in an modular containerised environment** G. Kolb Germany
	SOC-41396 Phase equilibrium model and synthesis of process alternatives by reactive distillation for the isoamyl acetate production from fusel oil C. Sánchez Correa, I. Gil Chaves, G. Rodríguez Niño Colombia	**OC-71761 Using in-situ viscosimetry and morphogranulometry to explore hydrolysis mechanisms of filter paper and pretreated sugarcane bagasse under semi-dilute suspensions** T. Le, D. Anne-Archard, V. Coma, X. CAMELEYRE, E. Lombard, K. To, T. Pham, T. Nguyen, L. Fillaudeau Vietnam	**OC-93141 Biofuels and biorefinery R&D at the Department of Chemistry of Federal University of Paraná** L. Pereira Ramos Brazil

	ROOM A5 (Cont.)	ROOM B1 (Cont.)	ROOM B2 (Cont.)
16:00 - 17:30 h	JE-IPIC-Hybrid Process and Multifunctional Process 2 Chair: B. Calloway y F. Hernandez Fernandez	TOPIC 6.5 Bio-fuels Chairs: M.Cuella Soares, L.Wielen	16:00 - 17:45 h JE-LIGNOCELLULOSIC Thermo-Conversion & Bioenergy 3 Chairs: Gutiérrez, Rojas
	SOC-71861 Process intensification of ring closing metathesis reactions; a generic solution to high dilution issues. D. Ormerod, A. Cupani, W. Porto-Carrero, M. Dorbec Belgium	**OC-23846 Hydrodynamics for the Integration of Fermentation and Separation in the Production of Diesel and Jet Biofuels** R. Da Costa Basto, R. Mudde, L. van der Wielen, M. Cuellar Netherlands	**SOC-54636 Effect Of Indigenous And External Catalysts On The Bio-Oil Production By Lignocellulose Fast-Pyrolysis** H. Hernando Marcos, J. Fermoso, S. Jimenez, A. Lappas, E. Heracleous, P. Pizarro, J. Coronado, D. Serrano Spain
			SOC-85451 Use of residual cotton fibers to prepare composite materials. An analysis of the interphase. A. Serra, H. Oliver-Ortega, Q. Tarrés, F. Julian, P. Mutjé, M. Ardanuy, F. Espinach Spain
			SOC-54026 Synergetic effects in the catalytic co-pyrolysis of lignocellulose/plastic mixtures for upgrading the bio-oil properties S. Jimenez, A. Peral, J. Coronado, D. Serrano, P. Pizarro Spain

	ROOM B3	ROOM B4	ROOM C1
16:00 - 17:30 h	JE-Energy Storage 1 KN=18´ SOC=9´ Chair: Zhang, Sciacovelli	TOPIC 7.1-Resources Use & Sustainable Technologies 3 Chairs: Brandt, Rivero	16:00 - 19:00 h JE-ESCAPE27 T2.- Synthesis and Design Chairs: Prof. Abderrazak Latifi and Dr. Kathleen Aviso
	KN-22671 Electrodeposition and hydrothermal growth of high performance solid and mesostructured Li-ion cathodes and anodes Paul Braun Urbana Illinois, Un	**OC-56736 Impact of membrane material properties on the performance of a combined pervaporation and distillation process for biobutanol concentration** F. Kirchbacher, M. Miltner, A. Friedl, W. Wukovits Austria	16:30 An industrial application of process intensification in the manufacture of dimethyl and diphenyl carbonate 1033 **Juan Javaloyes-Anton, Sergio Ferrer-Nadal, Ignacio Vic and José A. Caballero**

	ROOM B3 (Cont.)	ROOM B4 (Cont.)	ROOM C1 (Cont.)
16:00 - 17:30 h	JE-Energy Storage 1 KN=18´ SOC=9´ Chair: Zhang, Sciacovelli	TOPIC 7.1-Resources Use & Sustainable Technologies 3 Chairs: Brandt, Rivero	16:00 - 19:00 h JE-ESCAPE27 T2.- Synthesis and Design Chairs: Prof. Abderrazak Latifi and Dr. Kathleen Aviso
	SOC-84961 Electrochemical impedance spectroscopy corrosion monitoring technique on thermal energy storage materials at high temperature A. Fernandez Diaz-Carralero Chile	**OC-50836 Hydroprocessing Of Rapeseed Oil Over Ni Supported Over Both Hierarchical And Commercial Zeolites** D. Serrano, J. Botas Spain	16:50 Hedging Against Uncertain Feedstock Compositions in Shale Gas Processing System Designs with Intensified Equipment Capacities 1051 **Jian Gong and Fengqi You**
	SOC-84251 Transparent Conducting Films using Copper Alloy Nanowires S. Saha, S. Deodhar, S. Ghosh, J. Chakraborty India	**OC-44241 Catalytic hydrogenolysis of different types of lignin derived from softwood** E. Shimanskaya, E. Sulman, V. Molchanov Russia	17:10 Novel Reactive Distillation Processes to produce Diphenyl Carbonate: Multi-Objective Optimization involving Cost and Controllability Criteria 1069 **Gabriel Contreras-Zarazúa, José Antonio Vazquez-Castillo, Cesar Ramirez-Marquez, Juan Gabriel Segovia-Hernández and Jesus Rafael Alcantara-Avila**
	SOC-82496 Synthesis of T Nb2O5 /Nitrogen and Sulphur Co-doped Graphene for Lithium-Ion Hybrid Supercapacitors. X. JIAO, Qingli HAO China PR	**OC-43016 Life Cycle Assessment of Lignocellulosic Biofuel Production in India** Y. Shastri, G. Murali India	17:30 Design and Control of Processes for 2-Ethylhexyl Acrylate Production 1087 **Mihai Daniel Moraru and Costin Sorin Bildea**
	SOC-93436 Next Generation Lithium-Based Batteries Y.Lu, China PR	**OC-34676 Cloud manufacturing as a sustainable process manufacturing route** O. Fisher, N. Watson, R. Gomes United Kingdom	17:50 Innovative design and simulation of a castor oil biorefinery 1111 **Alexandre Corneliu Dimian, Petrica Iancu, Valentin Plesu, Alexandra-Elena Bonet-Ruiz and Jordi Bonet**
	SOC-82356 Alloy Electrodes Designing for High Performance Liquid Metal Batteries K. Jiang, H. Li, M. Zhou, K. Wang China PR		18:10 Model-Based Analysis and Integration of Synthetic Methane Production and Methane Oxidative Coupling 1147 **Estelle le Sache, Yang Peng, Harvey Arellano-Garcia and Tomas Ramirez Reina**

	ROOM B3 (Cont.)	ROOM B4 (Cont.)	ROOM C1 (Cont.)
16:00 - 17:30 h	JE-Energy Storage 1 KN=18´ SOC=9´ Chair: Zhang, Sciacovelli	TOPIC 7.1-Resources Use & Sustainable Technologies 3 Chairs: Brandt, Rivero	16:00 - 19:00 h JE-ESCAPE27 T2.- Synthesis and Design Chairs: Prof. Abderrazak Latifi and Dr. Kathleen Aviso
	SOC-80856 Molecular dynamic and experimental study of the self-discharge connected with negative alkaline earth metal in liquid metal battery L. Cai, H. Ni, S. Ze, J. Yu China PR		18:30 A simplified kinetic and mass transfer modelling of the thermal hydrolysis of vegetable oils 1177 **Hector Forero-Hernandez, Mark Jones, Bent Sarup, Jens Abildskov, Anker D. Jensen and Gürkan Sin**
	SOC-78396 Facile One-Pot Synthesis of Metal Phosphide-Nitrogen-doped Carbon Hybrid Nanosheet as Ultra-stable anode for SIBs G.Zhang China PR		
	SOC-77011 Binder-free Metal Oxide Nanoflakes for Li, Na and Al Storages in Advanced Secondary Batteries H. Wang, S. Chen, Y. Bai, F. Wu, C. Wu China PR		

	ROOM C2	ROOM C3	ROOM C4
16:00 - 19:00 h	JE-ESCAPE27 T1.- Modeling and Simulation Chairs: Prof. Iqbal Mujtaba and Prof. Parisa Bahri	JE-ESCAPE27 T8.- CAPE/PSE Education/Training Chairs: Prof. Nuno Oliveira and Dr. Manel Serra	JE-ESCAPE27 T6.- Concepts, Methods and Tools Chairs: Prof. Michail Georgiadis and Prof. Stephane Negny
	16:30 CFD modelling of pulsed sieve plate liquid extraction columns using OPOSPM as a reduced population balance model 61 **Samer Alzyod, Menwer Attarakih, Abdelmalek Hasseine and Hans-Jörg Bart**	16:30 Implementation of performance indicators for automatic assessment 2971 **Laura Marcano, Tiina M. Komulainen and Finn Aakre Haugen**	16:30 Integrated process performance assessment considering uncertainty in biopharmaceutical manufacturing operations 2227 **Gioele Casola, Christian Siegmund, Markus Mattern and Hirokazu Sugiyama**

	ROOM C2 (Cont.)	ROOM C3 (Cont.)	ROOM C4 (Cont.)
16:00 - 19:00 h	JE-ESCAPE27 T1.- Modeling and Simulation Chairs: Prof. Iqbal Mujtaba and Prof. Parisa Bahri	JE-ESCAPE27 T8.- CAPE/PSE Education/Training Chairs: Prof. Nuno Oliveira and Dr. Manel Serra	JE-ESCAPE27 T6.- Concepts, Methods and Tools Chairs: Prof. Michail Georgiadis and Prof. Stephane Negny
	16:50 Population balance modelling of pulsed packed bed extraction columns using PPBLab software 67 **Menwer Attarakih, Samer Alzyod and Armin Fricke**	16:50 Cognitive Behavior Based Framework for Operator Learning: Knowledge and Capability Assessment through Eye Tracking 2977 **Laya Das, Babji Srinivasan and Rajagopalan Srinivasan**	16:50 Recipe Management based on ISA-88 using Semantic Technologies 2293 **Elisabet Capón-García, Edrisi Muñoz, Antonio Espuña and Luis Puigjaner**
	17:10 Particle Size Effects on Collision and Agglomeration in Turbulent Channel Flows 79 **Tosanbami Ogholaja, Derrick O. Njobuenwu and Michael Fairweather**	17:10 Recent Evolutions and Trends in the Use of Computer Aided Chemical Engineering for Educational Purposes at the University of Liège 2941 **Grégoire Léonard, Sandra Belboom, Dominique Toye, Marie-Noëlle Dumont, Angélique Léonard and Georges Heyen**	17:10 Linking Process Simulation and Automatic 3D Design for Chemical Plants 2311 **Sandra Fillinger, Gregor Tolksdorf, Henning Bonart, Erik Esche, Günter Wozny and Jens-Uwe Repke**
	17:30 Modelling of Droplet Absorption and Evaporation during Pharmaceutical Tablet Coating 85 **Charalampos Christodoulou, Luca Mazzei, Salvador García-Muñoz and Eva Sorensen**	17:30 Flipping the Capstone Process Design Course 2923 **Daniel R. Lewin and Abigail Barzilai**	17:30 Towards an Ontological Backbone for Pharmaceutical Digital Supply Chains 2329 **Nikolaos Trokanas and Jagjit Singh Srai**
	17:50 Random porous network generation and 1D mass transfer simulation for gamma-alumina supports 91 **Sónia Ferreira, Jan J. Verstraete, Elsa Jolimaitre, Damien Leinekugel-Le-Cocq and Christian Jallut**	17:50 Computer Aided Control Projects as Main Assessment Component of Master's Advanced Control Courses 2953 **Carla I. C. Pinheiro and Rui M. Filipe**	17:50 ANSI/ISA 88-95 Standards Based-Approach for Improved Integration of Recipes and Operational Tasks Supported by Knowledge Management 2335 **Edrisi Muñoz, Elisabet Capón-García and Luis Puigjaner**
	18:10 Large Eddy Simulation of Microbubble Transport in Vertical Channel Flows 73 **Kenneth S. Asiagbe, Michael Fairweather, Derrick O. Njobuenwu and Marco Colombo**	18:10 Energy Systems Optimisation: Highlights from an interdisciplinary postgraduate module development 2965 **Emilia Kondili and John K. Kaldellis**	18:10 Integration of CAPE Models and Data for the Domain of Biorefining: InterCAPEmodel Ontology Design 2341 **Linsey Koo, Nikolaos Trokanas, Anna Panteli, Edlira Kalemi, Nilay Shah, Madeleine Bussemaker and Franjo Cecelja**

	ROOM C2 (Cont.)	ROOM C3 (Cont.)	ROOM C4 (Cont.)
16:00 - 19:00 h	JE-ESCAPE27 T1.- Modeling and Simulation Chairs: Prof. Iqbal Mujtaba and Prof. Parisa Bahri	JE-ESCAPE27 T8.- CAPE/PSE Education/Training Chairs: Prof. Nuno Oliveira and Dr. Manel Serra	JE-ESCAPE27 T6.- Concepts, Methods and Tools Chairs: Prof. Michail Georgiadis and Prof. Stephane Negny
		18:30 CAPE in the Chemical Engineering Master's Integrated Programme at IST-ULisboa 2959 **Henrique A. Matos, Carla I.C.Pinheiro and Vitor Geraldes**	

	ROOM C6
16:00 - 17:30 h	ICOSSE Rapid Fire / Lightning Round Session

	ROOM C5	ROOM C7	ROOM C8
16:00 - 17:30 h	TOPIC 5.5-Modelling in Product Design of Food Products Chairs: Kohlus, Bröckel	JE-AOPs-Fenton Processes Chair: Villota, Esplugas	TOPIC 7.3 Water Management & Treatments 5 Chow Wei-Lung, Bernal Romero
	KN-63781 **A novel methodology to assess digestion of foods** S. Bakalis, O. gouseti, T. Moxon, P. Fryer United Kingdom	**OC-76841 Advanced Oxidation Of Pharmaceuticals In Different Water Matrices With Modified Iron Minerals** M. Munoz, S. Álvarez-Torrellas, Z. de Pedro, J. Casas, J. Rodriguez, Spain	**KN-54341** **Towards highly selective catalysts for the reduction of nitrate in water** A. Perez-Coronado, J. Baeza, M. Al-Bahria, L. Calvo, Y. Zhao, L. Lefferts, F. Epron, J. Rodriguez, M. Gilarrranz, J. Palomar Spain
	OC-61291 Artificial Neural Network modelling applied in a drying process of guava (Psidium guajava L.) cubic pieces of guava in a spouted bed dryer M. Souza Leite, Y. da Silva Veloso, O. Sanchez de Alsina, M. Alves Santos Brazil	**OC-84296 Degradation Of Bezafibrate By Photo-Fenton At Circumneutral Ph In Presence Of Citrate** J. Albahaca, P. Marco, N. López, J. Giménez, S. Esplugas Barcelona	**OC-55876 Microbial Community In Leachate Nitrification-Denitrification Processes** A. Díaz, A. Laca, J. González, P. Oulego, S. Collado, M. Díaz Spain
	OC-62886 Modeling in a lactose adsorption process M. Alves, M. Leite, E. Costa, A. Balieiro, G. Oliveira, O. Sanchez, null Lima, C. Soares Brazil	**OC-31621 Technical development for coupling photo-electro-chemical catalysis and photo-electro-Fenton reaction for wastewater treatment** C. Huang, C. Liu, C. Huang Taiwan	**OC-54931 A comparative study of textile wastewater treatment by activated sludge, MBR and MBBR-MBR** X. Yang, V. Lopez Grimau, Crespi Rosell Spain
	OC-66326 Production of oligosaccharides by autohydrolysis of residues from coffee production and processing A. Rolando Andrés, M. Leal, D. Nabarlatz Colombia	**OC-49096 UV-VIS Photocatalytic activity of Fe/Nb-based photocatalysts obtained by different synthesis routes** M. Cleto Meirelles Ribeiro, N. Sinisterra Cortes, M. Torres Barbosa, C. Costa de Amorim, M. Diniz Leao Brazil	**OC-54481 Deep eutectic solvents: a green approach for water treatment** C. Florindo, L. Branco, I. Marrucho Portugal

	ROOM C5 (Cont.)	ROOM C7 (Cont.)	ROOM C8 (Cont.)
16:00 - 17:30 h	TOPIC 5.5-Modelling in Product Design of Food Products Chairs: Kohlus, Bröckel	JE-AOPs-Fenton Processes Chair: Villota, Esplugas	TOPIC 7.3 Water Management & Treatments 5 Chow Wei-Lung, Bernal Romero
	OC-79591 Design of perforated packages to preserve fresh produce considering temperature, gas concentrations and moisture loss D. Castellanos, R. Mendoza, L. Patiño[2] Colombia	**SOC-72041 Assessment Of The Solar Photo-Fenton Process In Continuous Raceway Pond Reactors As Tertiary Treatment** J. Sánchez Pérez, A. Agüera, B. Esteban, S. Arzate, A. Lorenzo Spain	**OC-53011 Full Advanced Membrane Wastewater Treatment (MBR - NF / RO) For Direct Onboard Reuse** M. Monnot, B. Nguyen, F. Zaviska, G. Lesage, M. Héran France
		SOC-82781 Influence of salinity on the Fenton process L. Lopez-Perela, A. Garcia-Costa, J. Casas, J. Rodriguez Spain	**OC-73496 Cobalt Ions Removal By Adsorption On Clinoptilolite** Spain
		SOC-86081 Investigating the Electro-Fenton (EF) Process Performance in Treating Highly Formaldehyde-Polluted Industrial Wastewater A. Bagheri, G. Moussavi, A. Khavanin[2] Iran	
		SOC-78966 PHOTO-FENTON TREATMENT OF METOPROLOL AND PROPANONOL AT CIRCUMNEUTRAL PH N. López, M. Ripoll, V. Romero, P. Marco, J. Giménez, S. Esplugas Spain	
		SOC-20806 changes on dissolved oxygen during the oxidation of dihydroxylated benzenes by fenton reagent V. Natalia, J. Lomas, L. Camarero, R. Peche, Spain	
		SOC-47141 Fenton oxidation as pretreatment for the improvement of the biodegradability of imidazolium ionic liquids E. Gómez Herrero, M. Tobajas, A. Polo, J. Rodríguez, A. F. Mohedano Spain	

	ROOM D1	ROOM D2	ROOM D3
16:00 - 17:30 h	**Trends and Challenges in CE Education** S. Engell & N. Kockmann, Technical University of Dortmund I. Grossmann, Carnegie Mellon University R. van Grieken, Universidad Rey Juan Carlos, Madrid Eva Sorensen, University College, London O. de Queiroz F. Araujo, Universidad Federal Rio de Janeiro J. Zhao, Tsinghua University, China J. Woo Lee, KAIST, Korea	16:00 - 19:00 h JE-ESCAPE27 T5.- Integrated/ Holistic Approaches Chairs: Prof. Marianthi Lerapetritou and Dr. Ludovic Montastruc	TOPIC 5.4 Membranes in Gaseous Media Chairs: Casado, Scholes
		16:30 Optimal design and operation of water supply chain networks using scenario-based dynamic negotiation and multiple negotiation terms 1921 **Sergio Medina-González, Fengqi You and Antonio Espuña**	**KN-65951 Dehydration of solid particles by Vacuum Membrane Dryer** A. Criscuoli, E. Drioli Italy
		16:50 Systematic decision making methodology for chemical product design in integrated biorefineries 1771 **Yen Yi Lai, Kelvin Chu How Yik, Han Peng Hau, Chai Peng Chow and Lik Yin Ng**	**OC-86206 Effect Of Uv Irradiation On The Performance Of Pvdf-Tio2 Photocatalytic Composite Membrane** D. Tran, J. Mericq, J. Mendret, C. Faur, S. Brosillon), France
		17:10 Integrated thermo-economic design of ORC process, working fluid and equipment using PC-SAFT 1795 **Johannes Schilling, Dominik Tillmanns, Matthias Lampe, Madlen Hopp, Joachim Gross and André Bardow**	**OC-86906 Enhanced CO2/CH4 and H2/CH4 separation performances of a polyimide mixed matrix membrane with zirconium-base metal organic frameworks** M. Ahmad, M. Navarro, B. Zornoza, J. Coronas, C. Tellez, V. Fila Czech Republic
		17:30 Definition of a Robustness Indicator for Assessment of Heat Exchanger Network Performances 1813 **Lucille Payet, Raphaele Théry-Hétreux, Gilles Hétreux and Pascal Floquet**	**OC-69331 Membrane Based Package Systems and Evaluation in High CO2 Gas Fields** D. Vuckovic Australia
		17:50 Total Site Integration as a Process Synthesis and Scheduling Tool in Multiple-feedstock Biorefineries 1825 **Konstantinos Pyrgakis and Antonis Kokossis**	**OC-70961 Membrane Contactors for efficient carbon capture** C. Scholes Australia

	ROOM D1 (Cont.)	ROOM D2 (Cont.)	ROOM D3 (Cont.)
16:00 - 17:30 h	**Trends and Challenges in CE Education**	16:00 - 19:00 h JE-ESCAPE27 T5.- Integrated/ Holistic Approaches Chairs: Prof. Marianthi Lerapetritou and Dr. Ludovic Montastruc	TOPIC 5.4 Membranes in Gaseous Media Chairs: Casado, Scholes
		18:10 An MILP model for simultaneous mass allocation and heat exchange networks design with regeneration units 1831 **Sami Ghazouani, Assaad Zoughaib and Solène Le Bourdiec (Sami Ghazouani)**	

	ROOM D4	ROOM D5	ROOM D6
16:00 - 17:30 h	TOPIC 2 Bio-separation 1 Chair: Abildskov, Seidel-Morgenstern	JE-PARMAT Processes of Particulate Systems 1 Chair: Tuzun, Nirschl	TOPIC 1-Teaching Safety and Sustainability Chair: Glassey, Foo
	OC-52156 A new binding model for complex elution behavior of mAb under high loading conditions on cation exchange tentacle resins J. Diedrich, W. Heymann, S. Leweke, S. Hunt, R. Todd, C. Kunert, W. Johnson, E. von Lieres Germany	**KN-55466 Unifying Principles of Product Design** W. Peukert, Germany	**KN-19946 Beyond disaster stories: Systems-based risk and process safety education** I. Cameron, P. Lant, M. Hassall Australia
	OC-27871 Continuous Centrifugal Partition Chromatography: using a mass transfer model for process optimization and various mode comparison France	**OC-53471 Effect of the Plate Design in a Spheronization Process of Pharmaceutical Pellets: DEM Simulation and Experiment** D. Weis, M. Niesing, M. Thommes, S. Antonyuk Germany	**OC-49391 Towards an Efficient Safety Education System to Manage Risks in Laboratories** D. Stricker, N. Gerweck, T. Meyer Switzerland
	OC-51066 Purification of interferon alpha-2b from Escherichia coli cultures using ionic liquid aqueous two-phase systems J. Antunes, A. Pedro, P. Pereira, L. Passarinha, J. Coutinho, M. Freire Portugal	**OC-61026 SILICON POWDERS IN THE SLS PROCESSES** D. Sofia, M. Poletto, D. Barletta Italy	**OC-86386 An integrated and inherent approach to teaching safety throughout the curriculum** M. Pollock, F. Akinmolayan, D. Pacifici, E. Sorensen United Kingdom

	ROOM D4 (Cont.)	ROOM D5 (Cont.)	ROOM D6 (Cont.)
16:00 - 17:30 h	TOPIC 2 Bio-separation 1 Chair: Abildskov, Seidel-Morgenstern	JE-PARMAT Processes of Particulate Systems 1 Chair: Tuzun, Nirschl	TOPIC 1-Teaching Safety and Sustainability Chair: Glassey, Foo
	OC-65171 Evaluation of an Aqueous two-phase system (ATPS) in separation of galactooligosaccharides (GOS) G. Castro, J. Serrato, K. Dolan, M. Siddiq Colombia	**OC-55216 New approaches for the production of polymer powders for additive manufacturing** J. Schmidt, S. Kloos, S. Romeis, K. Wirth, W. Peukert, Germany	**OC-31276 Applying Active Learning Methods in a Chemical Process Design Course** E. Cifrian, T. Llano, A. Andrés, B. Galán, J. Viguri Spain
	OC-73866 Resolution of racemic mixtures of fluorinated anaesthetics: Development and analysis of the chromatographic separation and target storage I. Mutavdzin, T. Munkelt, A. Seidel-Morgenstern Germany	**SOC-39701 Continuous wet granulation in pharmaceutical manufacturing: Modelling and experimental validation** S. Shirazian, S. Darwish, J. Zeglinski, D. Croker, G. Walker Ireland	**OC-19861 A multi-objective approach to demonstrating sustainability in the capstone design project** A.Hoadley, D. Brennan, E. Ventura-Medin
	OC-77061 GasN2'S chromatographic map generation plants: energetic savings and microbiological safety. A comparisson with traditional supply systems. A. Tulleuda Spain	**SOC-57681 Roller compaction integrated work stream in pharmaceutical manufacturing: population balance modeling** M. Pishnamazi, B. C. Dominguez, P. Cronin, B. Schaller, K. Moroney, A. Ziaee, L. Padrela, A. B. Albadarin, M. N. Collins, G. M. Walker Ireland	**SOC-44231 Using Safety Shares in the Chemical Engineering Class Room** D. Shallcross, Australia
		SOC-44536 Generation of Non-Spherical Particles by Desublimation and Detection of their Morphology with a Novel 3D Light Scattering Sensor T. Dillenburger, S. Antonyuk, S. Ripperger, M. Pitz Germany	**SOC-23971 Sustainability informed chemical engineers: Integrating socio-economic and green technology** J. Fitzpatrick, E. Byrne Ireland
			SOC-87541 Teaching of Chemical Engineering Design and Sustainability D. Foo, D. Ng, H. Lam, N. Chemmangattuvalappil Malaysia
			SOC- 80356 SUMAS K-Net: Energy, Environment and Social Sustainability Knowledge-Network A. Rodriguez-Martinez, H. Cabal Cuesta, D. Castrejon Botello, R. Romero Mexico

	ROOM D7	ROOM E1 (2nd Floor)	ROOM E8
16:00 - 17:30 h	JE-Electrochemical-Round Table Water Chair: Brillas OC - 20min SOC - 7.5 min	JE- Process Safety-Cases Studies & Lessons Learnt 8 Chair: Zhao Feng	**Workshop** "Formulation Scale-up & Industry 4.0" Ace Form4.0 1st part: Talks
	OC-35041 Arsenic and fluoride removal from groundwater by electrocoagulation Mr José Nava Mexico	**KN-54966 Equipment Exposed to External Fire & Complex Flare Network Analysis. Providing Guidance from Lessons Learned** J. Dunjó, M. Amorós, N. Prophet, G. Gorski United States of America	
	SOC-55136 Design and testing of an electrocoagulation reactor for fluoride abatement in underground water sources A. Betancor, V. Mena, S. González, S. Delgado, R. Souto Spain	**KN-54776 Characterization of BLEVE Phenomena in Equipment Exposed to External Fire. Combining Dynamic Thermal Stress Analysis & Vessel Wall Segmentation Approach** J.Dunjó , M. Amorós N.Prophet G. Gorski	
	SOC-61386 Optimization of an in-line electrochemical process for water disinfection using an experimental design method. F. Zaviska, L. Delgado Gonzalez France	**OC-55276 A Risk-Based Approach to Facility Siting of Process Plant Permanent and Portable Buildings which may be exposed to Explosions. Combining Exceedance Curves, Structural Response, and Human Vulnerability Criteria.** M. Amoros, J. Dunjo, N. Prophet, G. Gorski United States of America	
	SOC-67861 Electrochemical Water treatment for the removal of micropollutants C. Weidlich, S. Hild, J. Schuster, K. Mangold Germany	**OC-62586 In Search of Causes behind Offshore Oil and Gas Rig Fires** S. Halim, S. Janardanan, T. Flechas, M. Mannan, United States of America	
	SOC-37071 Electrochemical treatment of groundwater for civil use - An example of effective endogenous advanced oxidation process. A. De Battisti, P. Formaglio, S. Ferro, P. Verlicchi Italy	**OC-93206 Aerodynamic characterization of aluminum dust dispersion and the effects on flame propagation** C. Chanut, F. Heymes, P. Lauret, P. Slangen France	
		OC-92051 An Updated Analysis of CSB Investigation Reports P. Amyotte, Y. Irvine, F. Khan Canada	

	ROOM D7 (Cont.)	ROOM E1 (Cont.)	ROOM E8 (Cont.)
16:00 - 17:30 h	JE-Electrochemical-Round Table Water Chair: Brillas OC- 20 min SOC-7.5 min	JE- Process Safety-Cases Studies & Lessons Learnt 8 Chair: Zhao Feng	**Workshop** "Formulation Scale-up & Industry 4.0" Ace Form4.0 1st part: Talks
	SOC-48156 Efficiency enhancement in the electrochemical water softening method using a three-dimensional stainless steel wool cathode I. Sanjuán Moltó, D. Benavente García, E. Expósito Rodríguez, V. Montiel Leguey Universidad de Alicante, Spain		
	SOC-39156 Disinfection of highly fecal-polluted surface waters through the CabECO process C. Sáez, J. Isidro, E. Mena, J. Llanos, J. Lobato, P. Cañizares, M. Rodrigo Spain		
	SOC-57686 Diamond Electrodes for Electrochemical Synthesis T. Matthée, M. Fryda Germany		
	SOC-34431 CabECO process for the disinfection of waters in rural communities in Africa: preliminary results of the H2020 SafeWaterAfrica project M. Rodrigo, L. Schäfer, T. Matthée, P. Verlicchi, P. Fouché, J. Wilsenach, R. Bond, G. Wolfaardt, P. Hlabela, D. Juízo Spain		

	ROOM A2	ROOM A3	ROOM A4
17:30 - 19:00 h	TOPIC 6 Downstream Processing 3 Chair: C.Roque, A. Jungbauer	TOPIC 3 Kinetics & Catalysis 7 Chairs: Lasserre, Lemonidou	JE- Process Safety-Cases Studies & Lessons Learnt 6 Chair: Valerio Cozzani
	OC-36096 Deregulating Plasmid Replication Boosts Vaccine Titer and Provides Energetically Neutral Crowding Model M. Domach, M. Ataai, S. Khan United States of America	**OC-21241 The establishment of a coke-burn kinetic model for zeolite catalysts** M. Soerensen Denmark	**KN-71441 Hazards of Activated Carbon Cryogenic Gas Purifiers** H. Ait Mohamed Saudi Arabia

	ROOM A2 (Cont.)	ROOM A3 (Cont.)	ROOM A4 (Cont.)
17:30 - 19:00 h	TOPIC 6 Downstream Processing 3 Chair: C.Roque, A. Jungbauer	TOPIC 3 Kinetics & Catalysis 7 Chairs: Lasserre, Lemonidou	JE- Process Safety-Cases Studies & Lessons Learnt 6
	OC-87411 Direct Recovery of Malate Dehydrogenase from Unclarified Yeast Cell Homogenate Using Dye Affinity Chromatography in Stirred Fluidized Bed Y. Chang Taiwan	**OC-27896 Synthesis of polyoxymethylene dimethyl ethers from biomass-derived feedstocks: reaction routes and kinetics** P. Marín, R. Peláez, F. Díez, S. Ordóñez Spain	**OC-35181 A Review of the 2012 Reynosa Gas Plant Explosion** N. Prophet, A. Barrera United States of America
	OC-53566 Optimizing expanded bed adsorption media using multiphase computational fluid dynamics V. Koppejan, G. Ferreira, D. Lin, H. Wang, M. Ottens Netherlands	**OC-21531 On the adsorption behaviour and kinetics of a hydrotalcite-based adsorbent** K. Coenen, F. Gallucci, E. Hensen, M. Van Sint Annaland, Netherlands	**OC-72401 Learning lessons from three dust explosions** S. Egan France
	OC-42636 Reversible aqueous biphasic systems formed by ionic liquids for the selective separation of DNA and HSA A. Ferreira, M. Quental, D. Mondal, J. Coutinho, M. Freire Portugal	**OC-60996 Kinetics of NH3-SCR reaction network over Cu/chabazite** U. De-La-Torre, B. Pereda-Ayo, J. González-Marcos, M. Gutiérrez-Ortiz, J. González-Velasco Spain	**OC-59996 Transport Phenomena in Pool Fires through dimensionless numbers** L. Zárate, M. Cordero, B. Kozanoglu, J. Uribe López, E. Peralta, A. Regalado-Méndez Mexico
	OC-42911 The entire downstream process for inclusion bodies represented on a miniaturized HTS platform A. Dürauer, C. Walther, M. Berkemeyer, C. Brocard Austria	**OC-31471 Kinetics of Lithium Extraction from β-Spodumene** R. Moore, J. Mann, A. Montoya, B. Haynes Australia	**OC-68696 The management of industrial safety in chemical and petrochemical industry by comparing costs and benefits** C. Vianello, M. Milazzo, G. Maschio, Italy
	OC-62791 "Stickiness" factor as a tool to understand biomass-adsorbent interaction in Expanded Bed Adsorption Chromatography V. Yelemane, M. Kangwa, M. Fernández-Lahore Germany		
	OC-28866 Evaluation of Metabolites Extraction from Lignocellulosic Wastes of Tomato Tree D. Restrepo Serna, A. Caballero Galván, C. Cardona Alzate Colombia		

	ROOM A5	ROOM B1	ROOM B2
17:30 - 19:00 h	JE-IPIC-Hybrid Process and Multifunctional Process 3 Chair: A. Harvey y M.Ladero	TOPIC 6.5 Bio-chemicals Chairs: G.Ferreira, J. Villar	JE-LIGNOCELLULOSIC-Nanomaterials Chairs: Ferreira, Villar
	OC-28951 Biodiesel production in liquid – liquid film reactor assisted by membranes M. Noriega Valencia, P. Narváez Rincón, A. Habert, J. Cadavid estrada, L. Carreño3 Colombia	**OC-47941 In-situ product recovery using membrane-assisted reactive extraction for biobased 3-hydroxypropionic acid production** F. Chemarin, M. Moussa, F. Allais, C. Trelea, V. Athes-Dutour France	**KN-92571 Next Generation Textile Filaments Based on Nanocellulose: Spinning Bifunctional Nanofibrils and Achieving Wet Strength** O. Rojas, M. Vuoriluoto, H. Orelma, M. Lundahl, M. Borghei Finland
	OC-32351 Intensification of downstream processes in the biorefinery; product isolation and solvent regeneration by reactive distillation D. Painer, S. Lux, M. Siebenhofer Austria	**OC-24071 Integrated fermentative production of methyl esters** J. Carvalho Pereira, R. Médici, H. van Beek, E. Romero, L. Otten, U. Hanefeld, M. Fraaije, L. van der Wielen, A. Straathof Netherlands	**OC-29461 Bacterial Cellulose Modified with Xylan Polyelectrolytes** S. Santos, J. Carbajo, N. Gómez, M. Ladero, J. Villar Spain
	OC-57471 Silicone rubber membrane bioreactor for in-situ product removal M. Mihal, I. Cervenansky, J. Markos Slovakia	**OC-57111 Lactate Production In Membrane Bioreactors On Lignocellulosic Hydrolysates** W. Van Hecke, S. Verhoef, W. Groot, M. Sarić, B. van de Bunt, A. de Haan, H. De Wever, Netherlands	**OC-94411 Rapid Biosynthesis of Silver Nanocomposites using Mimosa pudica for antibacterial and antifungal activities** S. Dixit, N. Goel India
	SOC-86856 An Integrated Reactive-Separation Process for the Co-Hydrotreating of Vegetable oils and Sulfured-Diesel to Produce Green Diesel E. Perez-Cisneros, T. Viveros García, R. Lobo Oehmichen, R. Morales Rodríguez Mexico	**OC-50001 Mixed fermentation to produce chemical building blocks from C5/C6 sugar mixtures** L. Manzanero Hoyos, C. Brandam, C. Joannis-Cassan, P. Taillandier, S. Galier, H. Roux-de Balmann France	**OC-63271 Acetylated microfibrillated cellulose: A reinforcing agent with novel applications** A. Berg, N. Karna, J. Cea, F. Parra Chile
	SOC-77241 new bioethanol production process by integrating fermentation and ionic liquid extraction A. Pérez de los Ríos, F. Hernández Fernández, P. Zapata Henríquez, F. Missoun, V. Ortiz Martínez, L. Lozano Blanco, C. Godínez, M. Salar García Spain	**OC-70421 SOPHOROLIPIDS FROM THE SOLID-STATE FERMENTATION OF STEARIC ACID** P. Jimenez, A. Koh, X. Font, T. Gea Spain	**OC-87761 Smart nanopaper based on cellulose nanofibers with hybrid PEDOT:PSS/ Polypyrrole for energy storage devices** F. Vilaseca, M. Lay, N. Pellicer Spain

	ROOM A5 (Cont.)	ROOM B1 (Cont.)	ROOM B2 (Cont.)
17:30 - 19:00 h	JE-IPIC-Hybrid Process and Multifunctional Process 3 Chair: A. Harvey y M.Ladero	TOPIC 6.5 Bio-chemicals Chairs: G.Ferreira, J. Villar	JE-LIGNOCELLULOSIC-Nanomaterials Chairs: Ferreira, Villar
	SOC-80566 Valorization of the Biofuels Chain: Production of Additives from Ethanol and from Glycerol by Simulated Moving Bed Reactor R. Faria, N. Graça, A. Rodrigues	**OC-82211 Succinic acid production by fermentation of Actinobacillus succinogenes in a continuous packed bed bioreactor** M. Ferone, G. Olivieri, A. Marzocchella, P. Salatino Italy	**SOC-83266 Lignocellulosic Biomass Pre-treatment: Diluted Acid and Solvent Delignification** P. Vergara, M. Ladero, F. García-Ochoa, J. Villar Spain
	SOC-46831 Coupled pertraction - adsorption system for selective separation of natural flavors during their bioproduction I. Cervenansky, M. Mihal, J. Markos Slovakia		**SOC-89656 Reduction of cellulose crystallinity by heterogeneous pretreatment with a non-dissolving ionic liquid** H. Rodríguez, A. Holding, M. Castro, D. Rico del Cerro, I. Kilpeläinen, A. King Spain

	ROOM B3
17:30 -19:00 h	**Topic 2.1 Thermodynamics-Applications** Chairs: Magee, Sarti
	OC-84341 Homogeneous Reaction Process Enhancement Based on Multi-objective Optimization Method X. Cao, X. Yuan, S. Jia, China
	OC-87051 Study of the effect of volumetric and surface stresses on the ferrofluid flow in a channel C. Jiménez, A. Chaves, D. Fuentes, H. Vargas
	OC-58216 The Elastic Limit in the Yielding of Waxy Crude Oils: following on Boger's three-yield stresses concept H. Benkreira, A. Fakroun. United Kingdom
	OC-22511 Direct visualisation of scale-up effects on the mass transfer coefficient through the "blue bottle" reaction P. Piccione, A. Quarmby, A. Rasheed, D. Dionisi Switzerland

	ROOM B4	ROOM C5	ROOM C6
17:30 -19:00 h	TOPIC 7.1-Resources Use & Sustainable Technologies 4 Chairs: Miltner, Dominguez-Ramos	TOPIC 5 – Products & Materials	JE-PARMATNanoparticle Technology Chair: Peukert, Morgeneyer
	OC-32876 Use of decision trees in life cycle impact assessment of bio-based processes at early design stages P. Karka, S. Papadokonstantakis, A. Kokossis Greece	**SOC-72171 Manufacturing Technical Ceramics for Extreme Conditions for Catalytic Substrates by Binder Jetting Additive Manufacturing** M. Kramer, M. Watson, C. Fee, New Zealand	**OC-82586 Continuous synthesis and in situ SAXS analysis of nanoscale microporous Stöber silica** M. Meier, J. Ungerer, H. Nirschl Germany

	ROOM B4 (Cont.)	ROOM C5 (Cont.)	ROOM C6 (Cont.)
17:30 -19:00 h	TOPIC 7.1-Resources Use & Sustainable Technologies 4 Chairs: Miltner, Dominguez-Ramos	TOPIC 5 – Products & Materials	JE-PARMATNanoparticle Technology Chair: Peukert, Morgeneyer
	OC-30946 Novel Solutions For Solar Energy Driven Food, Energy and Water Systems R. Agrawal, United States of America	**SOC-69471 One size does not fit all: tailoring solutions to all the challenges along the biorenewable value-chain** A. Mialon, M. Heikkilä Finland	**OC-31696 Photoluminescence Properties of Zinc Sulfide Nanoparticles Classified by Size Selective Precipitation** Y. Mori, K. Yamamoto, Y. Hitomi, D. Segets, W. Peukert, K. Tsuchiya Japan
	OC-30116 Sustainability Evaluation and Estimations of Emissions for Generating Chemical Life Cycle Inventories G. Ruiz-Mercado, R. Smith, M. Gonzalez, D. Meyer, S. Li, F. Lima, United States of America	**SOC-45266 Crystallization in composite hydrogels for controlling polymorphism** M. Reus, H. Kramer, B. Eral Netherlands	**OC-88586 Structure characterization and mechanics of nanoparticle-based hierarchical aggregates** S. Zellmer, A. Diener, I. Manke, H. Markötter, A. Kwade, G. Garnweitner, C. Schilde Germany
	OC-29666 Life cycle assessment of hydrogen production via biogas dry reforming J. Dufour, Z. Navas-Anguita, P. Cruz, D. Iribarren Spain	**SOC-50576 Generation and drug loading of mesoporous silica nanoparticles** L. Ruffel, J. Soulie, F. Brouillet, C. Frances, M. Tourbin France	**OC-87911 Mechanical properties of nanoparticulate, cross-linked coating structures** J. Hesselbach, C. Schilde, A. Kwade, Germany
	OC-26391 Risk Assessment Of Levulinic Acid Production Process From Lignocellulosic Biomass And Upgrading To Gamma Valerolactone S. Leveneur, V. Casson Moreno, L. Vernières-Hassimi, G. Antonioni, L. Abdelouahed, A. Tugnoli, Y. Wang, E. Salzano, L. Estel, V. Cozzani France	**SOC-67491 Resvératrol solubility enhancement by encapsulation with beta-cyclodextrin using dry co-grinding process** M. Hai, A. Chamayou, Z. Arrar, F. Espitalier, M. Re, L. Galet France	**OC-83401 Multidimensional Characterization of Nanoparticle by Means of Analytical Ultracentrifugation** S. Wawra, J. Walter, T. Nacken, C. Halbig, T. Thadujeen, S. Eigler, G. Gorbet, D. Segets, B. Demeler, W. Peukert Germany
	OC-26161 Challenges in using sustainable biologically derived feedstocks in chemical process development M. Turnbull, A. Simpson, P. Langston United Kingdom	**SOC-77226 Computational fluid dynamics simulation of coagulation bath in dry-jet wet spinning process for polyacrylonitrile fiber production** S. Ngo, Y. Lim, Korea, South	**SOC-25126 Deagglomeration of carbon nanotubes using in-line high-shear apparatuses – vortex jet apparatus and pulsation flow-type apparatus** M. Vasilev, R. Abiev Russia

	ROOM B4 (Cont.)	ROOM C5 (Cont.)	ROOM C6 (Cont.)
17:30 -19:00 h	TOPIC 7.1-Resources Use & Sustainable Technologies 4 Chairs: Miltner, Dominguez-Ramos	TOPIC 5 – Products & Materials	JE-PARMATNanoparticle Technology Chair: Peukert, Morgeneyer
		SOC-60396 Poly (ionic liquids) in gas sample separations: design meets specificity D. J. S. Patinha, L. C. Tomé, M. Isik, D. Mecerreyes, A. J. D. Silvestre, I. M. Marrucho Portugal	**SOC-30996 Heavy metals removal from water using Multiwall Carbon Nanotubes** A. Oliveira, A. Correia, M. Rasteiro Portugal
		SOC-46656 Slug flow emulsion polymerization for rapid production of high molecular weight polymers T. Ono, K. Tawara, T. Watanabe Japan	
		SOC-45971 Synthesis of PLGA microparticles for drug delivery systems. I. Álvarez Lara, C. Gutiérrez, J. Rodríguez, A. De Lucas, M. García Spain	
		SOC-21556 Waterborne Multiwall Carbon Nanotubes/ Polymer Composites Prepared by In-Situ Miniemulsion Polymerization B. Pérez-Martínez, J. Asua, R. Tomovska Spain	
		SOC-58811 Exploring the effect of different fluorinated anions on CO2 separation through supported ionic liquid membranes Tomé A. Gouveia, E. Lozinskaya, Y. Vygodskii, A. Shaplov, I. Marrucho Portugal	
		SOC-91136 Effect Of Tara Gum And The Dehydration By Cycles On The Properties Of WPI Films L. Miranda, E. Cornejo, F. Chuta Peru	

	ROOM B4 (Cont.)	ROOM C5 (Cont.)	ROOM C6 (Cont.)
17:30 -19:00 h	TOPIC 7.1-Resources Use & Sustainable Technologies 4 Chairs: Miltner, Dominguez-Ramos	TOPIC 5 – Products & Materials	JE-PARMATNanoparticle Technology Chair: Peukert, Morgeneyer
		SOC-93841 Effects of pH and ionic strength on protein fouling in carbon nanotubes enhanced ultrafiltration membrane J. LEE, S. Jeong, Y. Ye, V. Chen, S. Vigneswaran, Z. Liu Germany	
		SOC-65816 Mathematical modelling and mass transfer coefficient prediction of the CO2/CH4 separation using dense mixed matrix composite hollow fibre membranes C. Casado-Coterillo, A. Fernández-Barquín, A. Irabien Spain	
		SOC-21396 Functional properties of third generation snacks by variation in the formulation and extrusion conditions (pretreatment). A. Rodriguez-Vidal, E. Morales-Sánchez, H. Martínez-Flores, G. Velazquez-De la Cruz, E. González-Jasso, H. Soto-Zúñiga Mexico	
		SOC-82541 Water-in-Water Emulsions: Study of Influence of Preparation and Formulation Variables on their Properties E. Santamaria, A. Maestro, J. Gutierrez, C. Gonzalez Spain	

	ROOM C7	ROOM C8	ROOM D1
17:30 - 19:00 h	JE-AOPs-Ozone and Catalytic Processes Chair: Adewuyi, Rodriguez	TOPIC 7.3 Water Management &Treatments 6 Chair: Kersten, Casado	Trends and Challenges in CE Research **A. Varma,** Purdue University **T.Mountziaris,** NSF **G. Marin,** Ghent University, **D. Khakhar,** IIT-Bombay **W.K. Yuan** and **X.G. Zhou** (ECUST)
	OC-81526 A combined photocatalytic-biological wastewater treatment approach: letting bacteria to do the hard work of controlling the system Y. Paz, Z. Shidlovsky, S. Yaron, Israel	**OC-49476 integrated processes for produced water polishing: enhanced flotation / sedimentation combined with advanced oxidation processes** S. Jiménez, M. Micó, M. Arnaldos, F. Medina, S. Contreras Spain	
	OC-75411 Development of a flow-type electrochemical reactor using porous carbon electrodes for degrading organic pollurtants H. Nakagawa, Y. Zeniya Japan	**OC-49386 Olive mill wastewater valorization through polyphenol adsorption and subsequent anaerobic digestion** D. Frascari, G. Rubertelli, D. Pinelli Italy	
	OC-40826 3D-printed graphene structures as efficient CWPO catalysts A. Quintanilla, P. Miranzo, I. Osendi, J. Casas, M. Belmonte Spain	**OC-46601 Anaerobic co-digestion of sewage sludge using industrial effluent** M. Chetty, I. Madondo South Africa	
	OC-85876 Use of alkaline activated persulfate and surfactant for the remediation of a soil polluted by fuel and PAHs: A column study M. Lominchar, A. Romero, A. Santos Spain	**OC-43466 Design of a photocatalytic process for the removal of persistent organic micropollutants for the drinkwater's production from natural water** J. Gervasi, A. Hantson, D. Thomas, F. Baudart, R. Ronneau Belgium	
	SOC-69206 Influence of carbon nature in Microwave Assisted Catalytic Wet Peroxide Oxidation A. Garcia-Costa, C. Marin, J. Zazo, J. Casas, J. Rodriguez Spain	**OC-39846 Degradation of ciprofloxacin in aqueous system by heterogeneous catalytic ozonation with iron oxide supported on zeolite** M. Manero, K. Gonzalez Labrada, R. Richard, C. Andriantsiferana, U. Jáuregui Haza, H. Valdès[5] France	
	SOC-88691 NO and SO2 removal by aqueous persulfate activated by heat and Fe2+: Experimental and kinetic-mass transfer model studies. Y. Adewuyi, United States of America	**OC-37171 Supercritical water desalination pilot plant with zero liquid discharge** S. Van Wyk, S. Odu, L. Van der Ham, S. Kersten Netherlands	

	ROOM C7 (Cont)	ROOM C8 (Cont.)	ROOM D1 (Cont.)
17:30 - 19:00 h	JE-AOPs-Ozone and Catalytic Processes Chair: Adewuyi, Rodriguez	TOPIC 7.3 Water Management &Treatments 6 Chair: Kersten, Casado	Trends and Challenges in CE Research **A. Varma,** Purdue University **T.Mountziaris,** NSF **G. Marin,** Ghent University, **D. Khakhar,** IIT-Bombay **W.K. Yuan** and **X.G. Zhou** (ECUST)
	SOC-30951 Activity and stability of a Fe/Al2O3 catalyst in the CWPO of 1-buthyl-3-methylimidazolium acetate in aqueous solution I. Fernández Mena, E. Diaz, C. Perez-Farias, A. Sarrion, I. Moreno-Andrade, J. Rodriguez, A. F. Mohedano Spain	**OC-73286 an efficient mesoporous carbon for the removal of cobalt from wastewater** I. Bernabé Vírseda, J. Gómez Martín, E. Díez Álcantara, A. Rodríguez Rodríguez, J. García Rodríguez, P. Saez González, Spain	
	SOC-41356 KrCl and XeCl excimer lamps for Dye UV and UV/H2O2 Decolorization: A comparative study A. Aristizabal, J. Lara, G. Perilla, R. Diez Colombia		
	SOC-41591 Mathematical Modeling and Simulation of Re-Used TiO2 Performance in the Photocatalytic Degradation of Dichloroacetic Acid on Solar CPC Reactor M. Mueses, J. Colina-Márquez, F. Machuca-Martínez Colombia		

	ROOM D3	ROOM D4	ROOM D5
17:30 - 19:00 h	TOPIC 5.4 Membrane Eng. Chairs: Criscuoli, de Pinho	TOPIC 2 Bio-separation 2 Chair: Fele, Meyer	JE-PARMAT Processes of Particulate Systems 2 Chair: Tuzun, Nirschl
	OC-65701 Immersed hollow fiber membranes : An innovative configuration for efficient filtration of fruit juices C. Rouquie, L. Dahdouh, M. Delalonde, C. Wisnieswski France	**OC-49236 Energy efficient release of proteins and carbohydrates from green microalgae during bead milling** E. Suarez Garcia, R. Postma, C. Safi, K. Yonathan, G. Olivieri, M. Barbosa, R. Wijffels, M. Eppink Netherlands	**OC-57081 Process Systems Engineering of Seeds Production** P. Piccione, C. Grosjean, D. de Bruyn Ouboter, M. Kempkes, M. Giordano Switzerland
	OC-64811 Study of mass transfer of water through a ionic liquid-based membranes for pervaporation of biobutanol R. Cabezas, G. Merlet, E. Quijada-Maldonado, J. Romero Chile	**OC-93536 Hydrodynamics of two-phase ionic liquid solvent systems in countercurrent chromatography** V. Lange, P. Angeli, L. Brown, D. Tsaoulidis United Kingdom	**OC- 91401 Cross Linking Between the Baffling Effect and Phase Inversion During the Liquid-Liquid Stage of a Suspension Polymerization** S.Maaß, M.Kraume, J.Cocke
	OC-57366 Super-hydrophobic polymeric membrane preparation for membrane distillation by non-solvent induced phase separation J. Mericq, S. Gosset, D. Bouyer France	**OC-66276 Multi-layer multi-component adsorption: a generic isotherm model for liquid chromatography** J. Lee, A. Seidel-Morgenstern, Germany	**OC-22681 Physical-chemical characterization and processing quarry tailings in order to separate rock powder to use it properly in construction materials** R. Souza, I. Carloni, N. Risso, A. Martins Brazil

	ROOM D3 (Cont.)	ROOM D4 (Cont.)	ROOM D5 (Cont.)
17:30 - 19:00 h	TOPIC 5.4 Membrane Eng. Chairs: Criscuoli, de Pinho	TOPIC 2 Bio-separation 2 Chair: Fele, Meyer	JE-PARMAT Processes of Particulate Systems 2 Chair: Tuzun, Nirschl
	OC-49456 Phase segregation and gas permeation properties of bi-soft segment poly(urethane urea) membranes for extracorporeal blood oxygenation devices. M. Faria, C. Moreira, M. de Pinho, Portugal	**OC-78296 The influence of the membrane cascade configuration on the performance of a protein hydrolysate fractionation process by ultrafiltration and nanofiltration** R. Abejon, M. Belleville, J. Sanchez-Marcano, A. Garea, A. Irabien Spain	**OC- 37416 Quality Monitoring and Control In Breakfast Cereal Processes using Neural Network Convolutions of Dynamic Process Data** U. Tuzun United Kingdom
	OC-34656 Technico-economic comparison of membrane technologies and amine based process for CO2 capture – a real opportunity for membrane technology at partial CO2 capture rate M. Kanniche, M. Pfister, E. Favre France	**OC-87076 Mechanical stress as pretreatment for the separation of exopolysaccharides (EPS) producing bacterial starter cultures** F. Häffele, S. Mende, D. Jaros, H. Rohm, H. Nirschl Germany	**SOC – 94001 A new energy-efficient impeller for suspension mixing** W. Orciuch, Makowski, R. Adamek, J. Bałdyga Poland
			SOC – 60871 Multi-scale Predictive Modelling of Spray Drying Process A. Ziaee, L. Padrela, A. B. Albadarin, B. Castro-Dominguez, B. Schaller, P. Cronin, K. Moroney, M. Pishnamazi, E. O'Reilly, G. Walker Ireland
			SOC – 75121 An investigation into the effect of process and operational parameters on the spray coating of detergent powders through contact spreading in tumbling drums. J. Green, K. Pitt, H. Ahmadian, P. Gupta, S. Greener, N. Yusof, A. Campbell, R. Smith United Kingdom

	ROOM D6	ROOM D7	ROOM E1 (2ND FLOOR)
17:30 - 19:00 h	Topic 1- Curriculum Development Chair: D. Schallcross	JE-Electrochemical-Round Table Industrial Electrochemistry Chair: Nava OC-20 min SOC 7.5min	JE- Process Safety-Miscellaneous Chair: Shakeel Kadri
	OC-66291 A successful campaign to increase the number of chemical engineering undergraduates A. Furlong United Kingdom	**OC-49871 Development And Demonstration Of A 3D Electrochemical Reactor For The In Situ Generation Of Sodium Hypochlorite** J. Manzano, M. Pastur, S. Tena, M. Blasi, E. Zaragoza, P. Vall, Y. Aguilera, J. Martin, A. Cabeza De la Fuente, X. Bernat Spain	**KN 27316 Why Does Management System Fail?** A. Ariawan
	OC- 33941 New chemical engineering provision: quality in diversity D. Brown, G. Campbell, P. Cox, J. Glassey, A. Martin, R. Patel, P. Rubini, P. Garcia Trinanes, S. Wilkinson United Kingdom	**OC-64351 Influence of the surfactant sodium dodecyl sulphate for producing persulfate using an electrochemical flow cell with diamond electrodes** C. Martinez-Huitle, K. de Freitas Araújo, J. Pires de Paiva Barreto, D. Medeiros de Araújo, D. Ribeiro da Silva, Brazil	**KN-27326 The Use of Familiar Tool to Diffuse the Feeling of Unease Relating to the Possible Non-Dependability of Barriers of Protection** A. Ariawan Canada
	OC- 91016 Professional skills in engineering education through problem-based learning F. Akinmolayan, J. Siefker, E. Sorensen United Kingdom	**SOC 39516 Development of the electrochemical technology for the production of hydrogen peroxide.** J.F. Pérez, C. Sáez,J.Llanos, C. López, P.Cañizares, M.A.Rodrigo	**KN-64971 Leadership's Role in Catastrophic Incident Prevention: Developing Influence through the Principals of High Reliability Safety** M. Snyder
	OC-55246 Teaching CFD for Chemical Engineers – Experiences and Challenges T. Eppinger, N. Jurtz, G. Wehinger, R. Aglave , M. Kraume	**SOC-52396 Development of a laboratory scale zero-gap alkaline water electrolysis stack** J. Hnát, R. Kodým, M. Paidar, K. Bouzek, Czech Republic	
	OC-75061 Modeling, Analysis And Simulation In The Teaching Of Transport Phenomena R. Betancourt , Ca.cardona	**SOC-52311 Electrochemical synthesis of furandicarboxylic acid.** R. Latsuzbaia Netherlands	

	ROOM D6 (Cont.)	ROOM D7 (Cont.)	ROOM E1 (2ND FLOOR) (Cont.)
17:30 - 19:00 h	Topic 1- Curriculum Development Chair: D. Schallcross	JE-Electrochemical-Round Table Industrial Electrochemistry Chair: Nava OC-20 min SOC 7.5min	JE- Process Safety-Miscellaneous Chair: Shakeel Kadri
		SOC-51936 Role of anode material in the electrochemical synthesis of peracetic acid J. Llanos, I. Moraleda, C. Sáez, M. Rodrigo, P. Cañizares Spain	
		SOC-51036 Electrosynthesis of hydrogen peroxide using solid polymer electrolyte R. Bisselink Netherlands	
		SOC-37246 Mass transfer correlations in laboratory scale parallel plate electrolyzers: effect of 3D electrodes and gas evolution S. Weusten, T. de Groot, J. van der Schaaf Netherlands	
		SOC-51271 Modeling electro-organic syntheses in laminar flow reactors with a parallel-plate or annular electrode configuration S. Fransen, J. Fransaer, S. Kuhn Belgium	
		SOC-32656 Maxwell-Stefan model of ion transport at high current density inside a monolayer Nafion membrane for intensified electrolysis R. Sijabat M. de Groot, J. Schouten J. van der Schaaf, Netherlands	

	ROOM E8
17:30 -19:00 h	**Workshop** " Formulation Scale-up & Industry 4.0" AceForm 4.0 2nd Part: Group Brainstorming and Networking

20:30 h **PhD Networking Party**

16th – 19th September 2019 - Florence, Italy

Bridging Science with Technology: a Renessaince in Chemical Engineering

ECCE 12

12th European Congress of Chemical Engineering

ECAB 5

5th European Congress of Applied Biotechnology

A new horizon of process technology and industrial biotechnology to develop a sustainable future

Aim of the Congress is stimulating discussions on bridging the gap between Science and Technology in relevant areas of application

FORMAT

6 Plenary Sessions
12 Parallel Sessions
3 Posters Sessions
6 Symposia
1 Students Session

IMPORTANT DATE

Call for abstract opens on January 2018

REGULAR TOPICAL SESSIONS - MAIN TOPICS

ECCE12
Food Engineering
Biomass
Nanotechnology
Environment, Safety, Energy, Quality
Particle Technology
Reaction Engineering
Process System Engineering
Separation Technology And Transfer
Fluid Mechanics And Transport Phenomena
Production And Properties Of Materials
Thermodynamics And Interfacial Phenomena
New Bologna Declarations
Industrial Electrochemistry
Quality Assurance, Control & Management Systems

ECAB5
Advanced And Innovative Technics In Industrial Bio Production, Bio-Separation, And Bio-Detection (Biosensors)
Bioenergy, Biofuels&Renewables, Bioresources, Biorefinery And Biomaterials (Bio-Active Compounds, Biofuels
Biocatalysis (Future Microbes And Enzymes)
Novel Processing (E.G. Microbial Fuel Cells), Downstream Processing
From Small To Large (Nano-Biotechnology, Scale-Up/Scale Down, Large-Scale Production)
Systems Biotechnology And Metabolic Engine
Protein And Enzyme Stability
Environmental Biotechnology
Biofilms In Industry And Biomedicine

COMMITTEES

Organizing committee

Chairmen: AIDIC President
EFCE Presidents
ESBES Presidents
Members: Local Organizers

Scientific Committee

Chairmen: EFCE and ESBES Scientific Vice Presidents
Members: EFCE Working Parties Chairmen
ESBES Sections Chairmen

SYMPOSIA

Production Of Chemicals And Polymers
Biomass And Renewables
Energy Conversion
Environmental Protection
Electrochemical And Photochemical Processes

STUDENTS SESSION

Lectures are all presented by Students. A contest will take place

ORGANIZATION

AIDIC
Italian Association
Of Chemical Engineering
Milan, Italy

Congress Venue

Congress Center "FIRENZE FIERA"

Piazza Adua 1, Florence. Italy

Organized by AIDIC
Italian Association of Chemical Engineering
Via G. Colombo 81/a – 20138 Milan, Italy
+39 02 70608276 – ecce12_ecab5@aidic.it

AIDIC

	ROOM A2	ROOM A3	ROOM A4
08:30 - 10:00 h	TOPIC 6.2 Health Biotech. 1 Chair: A. Jungbauer	TOPIC 3 Kinetics & Catalysis 8 Chair: Liu, Ferreira	JE-Energy Storage 2 Chair: Lu, García - Quismondo KN 18 min SOC 9 min
	OC-83221 Scale up of organoid expansion and fractionation for their widespread use in preclinical drug discovery N. Abajo Lima, M. Thomas, K. Luetchford, J. Chaudhuri, T. Dale, M. Ellis United Kingdom	**OC-78836 Catalyst deactivation in catalytic pyrolysis of biomass** M. Pala, G. Yildiz, F. Ronsse, W. Prins Belgium	**KN- 80646 The vanadium flow battery technology and its application in the energy storage field** H. Zhang China PR
	OC-36661 MELISSA: developing technology for life support in Space E. Peiro, C. Arnau, D. Garcia, L. Alemany, L. Poughon, C. Dussap, O. Gerbi, B. Lamaze, C. Lasseur, F. Godia Spain	**OC-75426 Coke evolution during the regeneration of spent MTO catalyst** X. Xu, Y. Zhao, X. Yuan, M. Ye, Z. Liu, China PR	**SOC-76716 Acceleration of Heat Release Rate in Latent Heat Storage Bath by Scraping Solidified PCM Layer** N. Maruoka Japan
	OC-56251 New models for predicting microcarrier just-suspended state in bioreactors C. Loubière, E. Olmos, E. Guedon, I. Chevalot, D. Toye, A. Delafosse France	**OC-77931 Computational insights into structure-property relationships in ceria-based catalysts** P. Deshpande, P. Pentyala, S. K. B India	**SOC-76351 Covalent organic polymers for highly efficient oxygen reduction** X. Zhonghua, China PR
	OC-29206 Numerical simulation of iPS cell behavior in a suspension culture using CFD-DEM M. Yano, T. Yamamoto, Y. Okano, M. Kino-oka Japan	**OC-30746 The relevance of the termination rate coefficient model to accurately describe the chain length distribution in the industrial production of expandable polystyrene** L. De Keer, P. Van Steenberge, M. Reyniers, K. Hungenberg, D. D'hooge, G. Marin Belgium	**SOC-73156 Thermal performance of paraffin wax/aluminum foam composite-cooled power lithium-ion battery pack based on non-uniform internal heat source** W. Song, China PR
	OC-21471 Cell-free synthetic biology: a bottom-up engineering strategy to revolutionize the biomedical industry Y. Lu China PR	**OC-85151 Prediction of Kinetic Behavior in Catalytic Polymerization of Polyolefin-based Graft/ Block Copolymers** M. Khodadadian, M. Villamil Rodriguez, L. Jasinska-Walc, R. Duchateau Netherlands	**KN-86256 Development of High-Energy Density Lithium Batteries** Y. Li China PR

	ROOM A2 (Cont.)	ROOM A3 (Cont.)	ROOM A4 (Cont.)
08:30 - 10:00 h	TOPIC 6.2 Health Biotech. 1 Chair: A. Jungbauer	TOPIC 3 Kinetics & Catalysis 8 Chair: Liu, Ferreira	JE-Energy Storage 2 Chair: Lu, García - Quismondo KN 18 min SOC 9 min
	OC-58256 A strategy for mesenchymal stem cells differentiation through non-viral gene transfection for tissue engineering A. Ramos-Murillo, M. García-Laguna, B. Camacho Rodríguez, G. Salguero López, R. Godoy-Silva[1]), Colombia.	**OC-82896 Chemical looping as a reactor concept for the oxidative coupling of methane over the MnxOy-Na2WO4/SiO2 catalyst, benefits and limitation** S. Parishan, V. Fleischer, P. Littlewood, R. Schomäcker[1] Germany	**SOC-72206 The effects of the fluctuating wind power on the work efficiency of a cryogenic energy storage system** Y.Guo China PR
			SOC-69891 Empirical equations for viscosity and specific heat capacity of fatty acid phase change materials C.Luisa F. Spain
			SOC-69341 Advances in Li-S batteries: When 3D graphene meets with S and Li metal Qiang Zhang China PR

	ROOM A5	ROOM B1	ROOM B2
08:30 - 10:00 h	TOPIC 7.1-Resources Use & Sustainable Technologies 5 Chair: J. Posada y H.VandenBerg	TOPIC 6.4 M3C 1 Chair: J, Glassey, B.Hitzmann	JE-NC Nanocellulose Applications Chair: Cranston, Ferreira
	OC-24561 Evaluating the operational inefficiencies of Waste to Energy (WtE) plants in Spain from a life cycle thinking perspective M. Margallo[1], I. Garcia Herrero, J. Laso, I. Vazquez Rowe, Y. Lorenzo Toja, A. Irabien, R. Aldaco[1] Spain	**OC-42496 Embedding equation oriented kinetic models for bioethanol fermentation process in a sequential modular flowsheet simulator** N. Nosrati Ghods, M. Naidoo, S. Harrison, A. Isafiade, S. Tai South Africa	**KN-74011 Bacterial nanocellulose membranes: production and application** N. Mendes de Carvalho, J. Artem Ataide, P. Gava Mazzola[2], A. F. Jozala[1] Brazil
	OC-22966 Implementation and operability barriers to heat integration – An interview study at an oil refinery E. Svensson, S. Marton, S. Harvey[2] Sweden	**OC-30191 Modeling of complex bio systems using BatchReactor®** O. Baudouin, C. Brandam, S. Dechelotte, P. Guittard, X. Meyer, R. Sardeing[1] France	**OC-98426 Hairy nanocellulose** T. van de Ven Canada
	OC-21306 The role of life-cycle indicators in energy planning: road transport and power generation in Spain D. Iribarren[1], D. García-Gusano, J. Dufour[2] Spain	**OC-62771 Parameter estimation of biochemical S-systems using derivative-free optimization** E. Penêdo de Carvalho, C. Borges de Carvalho, M. Antonio da Silva Sá Ravagnani Brazil	**OC-83546 The influence of the CNF production method on the final properties of nanopapers: enzymatic hydrolysis vs. TEMPO-mediated oxidation** M. Delgado-Aguilar, Q. Tarrés, S. Boufi, P. Mutjé[1] [1] University of Girona, Spain [2] University of Sfax, Tunisia
	OC-32126 A novel process for the sustainable production of propylene glycol from glycerol: process design and techno-economic evaluation M. Sikkink, A. Sustronk, N. Timmerhuis, F. Esmaeili, L. van der Ham, H. van den Berg, I. Dencic[2] Netherlands	**OC-54216 Analysis platforms for scale up/ down of Streptococcus thermophilus cultivations** K. Pellicer Alborch, A. Angersbach, K. Paulick, P. Neubauer, S. Junne[1] Germany	**OC-90431 Effect of residual lignin content on PVA/CNF composites (polyvinyl acetate/ nanofibrillated cellulose)** M. Pereira, C. Soto, A. Andrade, A. Soto[2] Chile
	OC-59906 Collaboration 4.0 - Paradigm Shift in design thinking, equipment selection and project execution required to meet lowest life cycle costs C. Hälsig Netherlands	**OC-90096 On Liquid Film Measurements Using Laser Multi-Reflection Technique** H. Ouldrebai[1], E. SI-AHMED, M. hammoudi, J. legrand, Y. salhi, J. pruvost[3] France	**OC-81161 Evaluation of Nanofibrillated Cellulose as Rheology Modifier of Water Based Drillings Fluids (WBMs) for Argentina' Shale.** D. Estenoz, Y. Villada, N. Casis, E. erdmann, M. Peresin[3] Argentina

	ROOM A5 (Cont.)	ROOM B1 (Cont.)	ROOM B2 (Cont.)
08:30 - 10:00 h	TOPIC 7.1-Resources Use & Sustainable Technologies 5 Chair: J. Posada y H.VandenBerg	TOPIC 6.4 M3C 1 Chair: J, Glassey, B.Hitzmann	JE-NC Nanocellulose Applications Chair: Cranston, Ferreira
	OC-16026 Synthesis and Optimal Design of Wastewater Stabilisation Ponds Networks M. Ochoa, V. Estrada[2], P. Hoch, Argentina	**OC-71536 On-line detection of proportional changes of tryptophan and NADH fluorescence intensity due to glucose pulse during ethanol growth phase** S. Asssawajaruwan, P. Eckard, B. Hitzmann Germany	**OC-87931 Smart nanomaterials with cellulosic matrix and magnetic properties** P. González, S. Castelar, G. Ibarz, C. Crespo, Spain

	ROOM B3	ROOM B4	ROOM C2
08:30 - 10:00 h	JE-AOPs-Novel Materials and Nanoparticles for AOPs Applications Chairs: Sharma Hermosilla	TOPIC 7.4 &7.5 Soil Remediation & Wastes 1 Chair: Jaffe, Canizares	JE-ESCAPE27 T1.- Modeling and Simulation Chairs: Prof. Heinz A Preisig and Dr. Norbert Asprion
	OC-69186 Ferrates(FeVI, FeV, and FeIV) as Green Materials in Treatment of Water and Wastewater V. Sharma, R. Zboril, J. Filip[3] United States of America	**OC-43801 Electrokinetic-assisted phytoremediation of soils polluted by atrazine in bench-scale mesocosms** V. Sánchez, F. López-Bellido, P. Cañizares, L. Rodríguez Spain	08:30 Physics-Based Surrogate Models for Optimal Control of a CO2 Methanation Reactor 127 **Karsten Hans Georg Rätze, Jens Bremer, Lorenz T. Biegler and Kai Sundmacher**
	OC-23681 Preparation of high-efficiency metal-free carbon catalysts for advanced oxidation process X. Quan, G. Wang, J. Wang China PR	**OC-23561 Bioremediation of Selected Organic and Inorganic Pollutants During Ammonium Oxidation Under Iron Reduction** P. Jaffe, J. Ge, E. Gilson, S. Huang, M. Ruiz A. Sherman, W. Shuai United States of America	08:50 Fouling Modelling in Crude Oil Preheat Systems 409 **José Loyola-Fuentes, Robin Smith and Megan Jobson**
	OC-48106 Use of magnetite and ozone in the treatment of municipal crude leachate landfill F. Machuca-Martinez, N. Mena-Guerrero[2] Colombia	**OC-91991 Maximizing the bang for every buck invested on biomass valorization** V. Yadav Canada	09:10 Development and Optimization of a Single Column Analog Model for a Multi-Column Counter-Current Solvent Gradient Purification Process 187 **Anton Sellberg, Niklas Andersson, Anders Holmqvist and Bernt Nilsson (Anton Sellberg)**

	ROOM B3 (Cont.)	ROOM B4 (Cont.)	ROOM C2 (Cont.)
08:30 - 10:00 h	JE-AOPs Novel Materials and Nanoparticles for AOPs Applications Chairs: Sharma Hermosilla	TOPIC 7.4 &7.5 Soil Remediation & Wastes 1 Chair: Jaffe, Canizares	JE-ESCAPE27 T1.- Modeling and Simulation Chairs: Prof. Heinz A Preisig and Dr. Norbert Asprion
	SOC-92561 3D MnO2 hollow microspheres as ozonation catalysts for elimination of endocrine disrupting compounds in water treatment C. HE, China PR	**OC-84991 Biogas Production from MSW Disposed in the Four Biggest Cities of Midwest Region, Brazil** M. Berni[1], I. Dorileo, P. Manduca Brazil	09:30 Crystallization of Calcium Carbonate and Magnesium Hydroxide in the Heat Exchangers of Once-through Multistage Flash Process Desalination 349 **Salih Alsadaie & Iqbal M. Mujtaba**
	SOC-90041 Design of photocatalysts based on layered oxides for energy-saving processes of obtaining hydrogen from bioalcohols I. Zvereva, I. Rodionov, T. Utkina, M. Chislov, O. Silyukov Russia		
	SOC-90751 ESR and TOC investigation of the Advanced Oxidation Processes on a Modified Graphite Surface M. Morsy Saudi Arabia		
	SOC-38986 Floating photocatalysts for wastewater depollution F. Fernández-Martínez, L. Muñoz Fernández[2], A. Nieto Márquez, E. Atanes, M. Martín de Vidales, F. Rossignol[3] Spain		
	SOC-37266 In Situ Spectrospecopy Investigation of the Surface-interface Charge-Transfer Process over Tailored Nano-structured Based PEC Fuel Cells X. II China PR		
	SOC-37211 Tailored Heter- and Nano- Junction between Transition Metal Oxides and Chalcogenides for Solar Energy Utilization and Conversion S. Fan X. Li China PR		

	ROOM C3	ROOM C4	ROOM C5
08:30 - 10:00 h	JE-ESCAPE27 T4.- Process Monitoring and Control Chairs: Prof. Sebastian Engell and Dr. Daniel Sarabia	JE-ESCAPE27 T3.- Planning and Scheduling Chairs: Prof. Emilia Kondili and Dr. Pedro Castro	JE-ESCAPE27 T2.- Synthesis and Design Chairs: Prof. Shinji Hasebe and Dr. Gabriela Henning
	08:30 Robust model-based design of experiments for guaranteed parameter estimation 1639 **Anwesh Reddy Gottu Mukkula and Radoslav Paulen**	08:30 Mixed-Integer Models for Simultaneous Optimization of Inventory Policies and Supply Chain Planning 1255 **Braulio Brunaud, José Miguel Laínez-Aguirre, Jose M. Pinto and Ignacio E. Grossmann**	08:30 A Target Oriented Robust Optimization Model for Selection of Engineering Project Portfolio under Uncertainty 949 **Kathleen B. Aviso, Charlle L. Sy and Raymond R. Tan**
	08:50 Enhanced global self-optimizing control 1651 **Yi Cao and Lingjian Ye**	08:50 Closed loop integration of planning, scheduling and control via exact multi-parametric nonlinear programming 1273 **Vassilis M. Charitopoulos, Vivek Dua and Lazaros G. Papageorgiou**	08:50 Robust Design of Chemical Processes Based on a One-Shot Sparse Polynomial Chaos Expansion Concept 613 **Xiangzhong Xie, René Schenkendorf and Ulrike Krewer**
	09:10 Effect of Fouling on Control and Energy Recovery in an Industrial CDU Column 1555 **Nicholas Seegulam, Francesco Coletti and Sandro Macchietto**	09:10 Dynamic Optimization and Control Strategy for the Planning of a Waste Management System involving Multiple Cities 1291 **José Ezequiel Santibañez-Aguilar, Antonio Flores-Tlacuahuac, Martín Rivera-Toledo and José María Ponce-Ortega**	09:10 An Optimisation-based Framework for Simultaneous Process Synthesis and Heat Integration 619 **Qingyuan Kong and Nilay Shah**
	09:30 Rethinking Boilers Control 1537 **Vanessa Conz, Guilherme de Mello Kich, Rafael Lopes de Oliveira, Renata Beck Hormazabal and Adriano da Silva Vieira**	09:30 A Hybrid Slot-Based/ General Precedence Approach for Planning Crude Oil Supplies 1321 **Pedro C. Pautasso, Vanina G. Cafaro, Jaime Cerdá and Diego C. Cafar**	09:30 Process Flow-Sheet Synthesis: Systems-Level Design applied to Synthetic Crude Production 643 **James Alistair Fox, Diane Hildebrandt, David Glasser and Bilal Patel**

	ROOM C6	ROOM C7	ROOM C8
08:30 - 10:00 h	JE-IPIC-Modelling and Control of Intensified Processes Chair: M. Cabassud y J. Klemes	TOPIC 3 Multiphase Flow & Reactors 1 Chair: Hampel, Ricoux	TOPIC 7.7-Capture, Storage & Use of CO2 1 Chair: Gazzani, Liras
	KN-32996 Dynamic analysis of intensified, millimetre-scale fixed bed reactor for Fisher-Tropsch synthesis N. Nikačević, V. Dikić, M. Mandić, B. Todić, D. Bukur4, M. Petkovska Serbia	**OC-50606 Dynamic Changes of Gas and Solids Conversion in Fluidized Bed Reactors** J. Haus, E. Hartge, S. Heinrich, J. Werther Germany	**OC-91776 Fast screening of adsorbents by Thermogravimetric analysis for CO2 capture from flue gases** A. Gutierrez, R. Nomen Ribé, R. González Olmos, J. Sempere Cebrián Spain
	OC-25496 Decentralized Temperature Control of a Reactive Dividing Wall Column: Design, Simulation Studies and Pilot Plant Operation L. Egger, G. Fieg Germany	**OC-27921 High temperature fluidization – experimental and numerical study** M. Mihajlovic, I. Campos Velarde, F. Gallucci, I. Roghair, M. van Sint Annaland Netherlands	**OC-91571 Optimization and dynamic mode control in a CO2 absorption process** J. Gutierrez, E. Ale Ruiz, E. Erdmann, E. Tarifa Argentina
	OC-76096 A Method for Chemical and Biochemical Sustainable Process Synthesis, Design and Intensification N. Garg, R. Gani, J. Woodley, Denmark	**OC-43876 Separation/ Classification of Coarse Particles by 3D Printed Helical Mini-Channel** S. Ookawara, S. Kanashiro, A. Banerjee, S. Yoshikawa Japan	**OC-90241 Gas Switching Technology for High Energy Efficiency Hydrogen Production through the Water Splitting Process** A. Zaabout, P. Dahl, J. Tolchard, Y. Larring, S. Amini Norway
	OC-21966 Design, Control and Economic Evaluation of Processes for n-Butyl Acrylate Production M. Moraru, C. Bildea Netherlands	**OC-77376 Compatibilizer-tracer: a powerful concept for polymer blending processes** C. Zhang, L. Feng, X. Gu China PR	**OC-89956 Internally circulating reactor for streamlining development of chemical looping technology: hydrodynamic instigation** M. Osman, A. Zaabout, S. Amini Norway
	SOC-32601 Development of an intensified reactor for propylene oxidation to acrolein M. Chateau, J. Portha, E. Schaer, G. Gauthier, C. Carvalho Rocha, V. Bellière-Baca France	**OC-50471 Simulation of particle nucleation and agglomeration in microchannels** W. Van Aeken, J. Delaere, V. Kazemi Kamyab, K. Shahzad, T. Van Gerven, S. Kuhn KU Leuven	**OC-89416 New insight in solar fuels production from CO2 photoreduction** V. de la Peña O'Shea, F. Fresno, L. Collado, P. Reñones, A. García, M. Liras, M. Barawi Spain
	SOC-62296 Intensification of membrane contactors for natural gas sweetening using model-based optimization V. Quek, N. Shah, B. Chachuat United Kingdom.		**OC-88991 Thermodynamic Modeling of Alternative Solvents for CO2 Capture with the Soft-SAFT Equation of State** J. O. Lloret, F. Llovell, L. F. Vega Spain

	ROOM C6 (Cont.)	ROOM C7 (Cont.)	ROOM C8 (Cont.)
08:30 - 10:00 h	JE-IPIC-Modelling and Control of Intensified Processes Chair: M. Cabassud y J. Klemes	TOPIC 3 Multiphase Flow & Reactors 1 Chair: Hampel, Ricoux	TOPIC 7.7-Capture, Storage & Use of CO2 1 Chair: Gazzani, Liras
	SOC-33806 Axial dispersion characterization in wavy millireactors of square and rectangular cross section N. Di Miceli Raimondi, M. Moreau, M. Cabassud, C. Gourdon, N. Le Sauze France		

	ROOM D1	ROOM D2	ROOM D3
08:30 - 10:00 h	JE-CFD Use of CFD to Improve Chemical Processes 4 Chair: Liu, Ribeiro Fontoura	JE-ESCAPE27 T7.- CAPE Applications Addressing Global Grand Challenges Chairs: Prof. Laureano Jiménez Esteller and Dr. Kamal Kuriyan	TOPIC 5.3-Polymer & Composites 1 Chair: Asua, Simula
	KN-63391 **A mesoscopic approach to liquid-liquid emulsions by means of a Lattice Boltzmann model** S. Mukherjee, P. Berghout, M. Pourtousi, H. Van den Akker Ireland	08:30 Power Generation Expansion Considering Endogenous Technology Cost Learning 2401 **Clara F. Heuberger, Edward S. Rubin, Iain Staffell, Nilay Shah and Niall Mac Dowell**	**KN-73786** **Grafting CO2-responsive polymers from crystalline nanocellulose via nitroxide-mediated polymerization** M. Cunningham, O. Garcia-Valdez, J. Arredondo, J. Glasing, P. Champagne, P. Jessop Canada
	OC-88831 Numerical investigation of the impact of washcoat deposition on the performance of particulate filters I. Belot, D. Vidal, R. Hayes, B. van Setten, M. Votsmeier, F. Bertrand Germany	08:50 A general superstructure for the optimal synthesis and design of power and inverse Rankine cycles 2407 **Cristina Elsido, Alberto Mian, François Maréchal and Emanuele Martelli**	**OC-56066 High performance polymer latexes containing nano-sized crystalline and liquid crystalline domains** E. Mehravar, J. Leiza, J. Asua Spain
	OC-81876 Direct numerical simulation of oscillating air bubbles rising in water M. Gumulya, R. Utikar, V. Pareek, G. Evans, J. Joshi Australia	09:10 Optimal design and operation of A-frame systems for solar power plants 2449 **José Antonio Luceño and Mariano Martín**	**OC-94691 Engineering photocatalytic nanocellulose-TiO2 paper: Effect of structure and nanoparticle aggregation state.** U. Garusinghe, V. Raghuwanshi, W. Batchelor, G. Garnier Australia

	ROOM D1 (Cont.)	ROOM D2 (Cont.)	ROOM D3 (Cont.)
08:30 - 10:00 h	JE-CFD Use of CFD to Improve Chemical Processes 4 Chair: Liu, Ribeiro Fontoura	JE-ESCAPE27 T7.- CAPE Applications Addressing Global Grand Challenges Chairs: Prof. Laureano Jiménez Esteller and Dr. Kamal Kuriyan	TOPIC 5.3-Polymer & Composites 1 Chair: Asua, Simula
	OC-41291 Novel comprehensive discrete ordinate model in openfoam and its coupling with a photoactivated reaction model for the simulation of photochemical reactors J. Moreno, C. Casado, J. Marugán Universidad Rey Juan Carlos, Spain	09:30 Economic optimization of integrated lignocellulosic biorefinery 2503 **Payala Venkat Vikash and Yogendra Shastri**	**OC-32736 Advanced cellulose acetate based materials with antibacterial properties obtained by supercritical impregnation with carbon dioxide** I. Zizovic, S. Milovanovic, J. Ivanovic, T. Adamovic, M. Jovanovic, D. Misic, L. Senerovic Serbia
	SOC-52421 Flow characterization of aerated bubble column reactor using electrical resistance tomography and computational fluid dynamic methods C. Bach, M. Albaek, U. Krühne, K. Gernaey, F. Ein-Mozaffari Denmark		**OC-46911 Predictive Modeling of Concentrated Colloidal Dispersions: Viscosity as an Indicator of Dispersion Properties, Coagulation and Fouling** M. Kroupa, M. Soos, J. Kosek Czech Republic
	SOC-82466 Conservation equations for turbulent kinetic energy and turbulent energy dissipation rate for a bubble column: estimation of individual terms in conservation equations and the role of turbulence models Z. Khan, J. Joshi India		

	ROOM D4	ROOM D5	ROOM D6
08:30 - 10:00 h	TOPIC 2 Membranes Chair: Gorak, Skiborowski	JE-PARMAT Characterization of Particulate Material Chair: Morgeneyer, Maaß	ICOSSE 3 Bringing Sustainability to the Mainstream 1 Session Chairs: Fazleena Badurdeen , Zdravko Kravanja
	OC-21196 Cellulose based Hollow Fiber Carbon Membranes for CO2 Removal from High Pressure Natural Gas in Subsea Process X. He Norway	**KN-76886 Characterisation of Functionalised Particles by Small Angle X-Ray Scattering (SAXS)** H. Nirschl Germany	**OC-48911 Demand trumps policy: bioenergy project experience in South Africa** H. von Blottnitz South Africa
	OC-43766 Systematic identification of suitable models for describing separation efficiency in organic solvent nanofiltration R. van den Bongard, L. Lingemann, M. Skiborowski, Germany	**OC-70191 Characterisation of Solid Dosing in work ups** A. McLaughlin, X. Ni United Kingdom	**OC-93311 Sustainability Measurements applied for Optimization and Synthesis of Different Systems** L. Čuček, K. Zirngast, Z. Novak Pintarič, Z. Kravanja, F. Marechal, I. Kantor Slovenia
	OC-44276 The role of structure on electrokinetic behavior of heterogeneous ion-exchange membranes Z. Slouka, L. Vobecka, J. Beneš, M. Svoboda, Czech Republic	**OC-55676 Comprehensive characterization of stressing in mills by particle probes** S. Romeis, A. Strobel, P. Herre, J. Schmidt, W. Peukert Germany	**OC-96741 Exploring the Relationship between Product Environmental Sustainability and Consumer Use** V. Ferrero, M. Tensa, D. Ross, B. DuPont United States of America
	OC-60486 Accuracy Analysis in the Determination of Gas Membrane Properties H. Wu, B. Kruczek, J. Thibault Canada	**OC-83896 Novel Sensor for Online Particle Sizing in Dry and Liquid Systems** F. Mahdi, T. Hazlehurst, T. Hunter, F. Muller, A. Hassanpour United Kingdom	**OC-52471 Sustainability assessment using a complex adaptive systems approach** A. Hoadley, N. Hanumante, Y. Shastri Australia
	OC-71846 Membrane condenser: an innovative membrane unit operation for humidity and quality air control E. Drioli, F. Macedonio Italy	**SOC-79016 X-ray imaging for design of gas nozzles and distributors in industrial fluidised bed reactors** M. Materazzi, P. Lettieri United Kingdom	**OC-25511 From linear to circular integrated waste management systems: a framework** S. Cobo, A. Dominguez-Ramos, A. Irabien Spain
	OC-24831 Water purification by Donnan dialysis D. Hasson, H. Shemer, R. Semiat, Israel	**SOC-59171 Limitations of NIR Spectroscopy as a PAT-Tool in Pharmaceutical Manufacturing** B. Castro Dominguez, B. Schaller, P. Cronin, K. Moroney, A. Ziaee, M. Pishnamazi, A. Albadarin, L. Padrela, G. Walker Ireland	

	ROOM D7		
08:30 - 10:00 h	JE-Electrochemical- Round Table Energy Chair: Botte OC-20 min SOC-7.5 min		
	OC43736 **Towards the Development of New Aluminium Batteries with Advanced Electrolytes** A. López Cudero, M. Pino, F.Pérez Alonso, P. Rodríguez. J. Chacón		
	SOC-74926 Activated KOH−Biocarbons for Supercapacitor Electrode Materials D. Ibrahim Abouelamaiem, I. Parkin, G. He, M. Titirici, A. Jorge Sobrido, P. Shearing, D. Brett United Kingdom		
	SOC-88536 Development of Tubular All Vanadium and Vanadium/Air Redox Flow Batteries S. Ressel, T. Flower, A. Chica, T. Struckmann Germany		
	SOC-70666 Modeling and simulation of a commercial Graphite-LiFePO4 cell in a full range of current density S. Taslimi Taleghani, B. Marcos, G. Lantagne Canada		
	SOC74796 Next Generation Lithium-Based Batteries Y. Lu China PR		

	ROOM D7 (Cont.)		
08:30 - 10:00 h	JE-Electrochemical- Round Table Energy Chair: Botte OC-20 min SOC-7.5 min		
	SOC-94201 Sulfur Composite Cathode Materials and Multi-functional Binders for Lithium Sulfur Batteries J. Wang, Q. Li, Z. Li, H. Yang, J. Yang China PR		
	SOC-43186 Study on chemical degradation of SOFC anode caused by trace impurities of S, Cl and Si in fuel gas. K. Kuramoto, S. Hosokai, K. Matsuoka, H. Kishimoto), Japan		

	MAIN AUDITORIUM
10:00 - 11:00 h	PLENARY SESSION "Solving Global Energy Issues" **Philippe A.Tanguy.** Vice President R&D Partnerships Total, France
11:00 - 11:30 h	COFFEE – POSTERS

	ROOM A2	ROOM A3	ROOM A4
11:30 - 13:00 h	TOPIC 6.2 Health Biotech. 2 Chair: A. Jungbauer	TOPIC 3 Kinetics & Catalysis 9 Chair: Guzman, Albert	JE-Energy Storage 3 Chair: Ma, Ding KN 18 min SOC 9 min
	OC-91971 Building brains: Marrying engineering & medicine in the fight against Alzheimer's disease V. Yadav, Canada	**OC-36911 Efficient Oxidative Desulfurization of Fuels by Vanadium Modified Dawson-Type Heteropoly Acid Tethered on tri-Methyl-Propyl Ammonium Silica** F. Banisharif, M. Dehgani, M. Capel Sánchez, J. Campos Martin Iran	**SOC-67451 Improving the Passive House Envelope Concept by the incorporation of Thermoregulating Microcapsules** A. Borreguero, A. Serrano, D. Lopez-Pedrajas, M. Carmona, J. Rodriguez Spain
	OC-82201 Protein Nanoparticles Engineered for Cancer Imaging and Therapy J. Lee Korea, South	**OC-66531 An Example of catalyst design and reaction engineering to reach an industrial feasibility: Tailoring the process of H2O2 direct synthesis** P. Biasi, T. Salmi Switzerland	

	ROOM A2 (Cont.)	ROOM A3 (Cont.)	ROOM A4 (Cont.)
11:30 - 13:00 h	TOPIC 6.2 Health Biotech. 2 Chair: A. Jungbauer	TOPIC 3 Kinetics & Catalysis 9 Chair: Guzman, Albert	JE-Energy Storage 3 Chair: Ma, Ding KN 18 min SOC 9 min
	OC-50541 Therapeutic Proteins: Challenging the pharmaceutical industry with biocompatible fluorinated ionic liquids N. Vieira, M. Alves, J. Araújo, L. Rebelo, M. Archer, A. Pereiro Portugal	**OC-47921 A novel synthesis of desulfurisation catalysts through cryochemical route: characterisation and application on synthetic fuel** S. Sengupta, P. Banerjee, P. Sandilya India	**SOC-67291 In-situ dispersion of highly thermally conductive nanoparticles in a binary molten salt for its property enhancement for thermal energy storage** P. Anabel, N. Helena, Z. Jiang, D. Yulong United Kingdom
	OC-41891 Quantification of animal cell sensitivity to hydrodynamic stress in a scale-down fed-batch bioreactor J. Tibocha, A. Bello, J. Pasos, R. Godoy-Silva Colombia	**OC-93946 New pyrrolyl-phosphorus amidite rhodium complexes for hydroformylation catalysis** J. Duran, P. van Leeuwen, A. Polo, L. Matas, F. Vilaseca Spain	**SOC-65136 Preparation of nano-composite by supramolecular chemistry assembly for high-performance supercapacitor** D. Shu, Y. Huang, H. Cheng, S. Zhao, D. Zeng, S. Li China PR
	OC-85316 Peptide array-based rational design of TNT recognition peptide derived from anti-TNT monoclonal antibody M. Okochi, K. Yanai, M. Muto, M. Tanaka Japan	**OC-68871 Dehydrogenation aromatization of methylcyclohexane over ZSM-5 and modifiedZSM-5 zeolite-supported Ni catalysts** Y. song, W. lin, J. long, H. tian China PR	**SOC-53511 Thermochemical material based on consecutive reactions for concentrated solar power plants: Proof of concept** L. Cabeza, A. Solé, C. Barreneche, C. Prieto, A. Fernández Spain
		OC-78191 Enhance glucose conversion via surface acidity design on amorphous silica-alumina J. Huang, X. Zeng, Z. Wang Australia	**SOC-52086 Adsorption heat storage: state of the art and future perspectives** A. Frazzica, A. Freni, V. Brancato, A. Sapienza, S. Vasta Italy
			SOC-50271 An SWS-based prototype for long-term heat and cold storage: experimental set-up and assessment procedure S. Vasta, L. Gordeeva, V. Palomba, D. La Rosa, A. Sapienza, A. Frazzica Italy
			SOC-49781 Multi-objective optimization of central solar heating plants with seasonal thermal energy storage V. Tulus, L. Cabeza, L. Jiménez, G. Guillen Gosalbez, de Gracia, D. Boer Spain

	ROOM A2 (Cont.)	ROOM A3 (Cont.)	ROOM A4 (Cont.)
11:30 - 13:00 h	TOPIC 6.2 Health Biotech. 2 Chair: A.Staby, A. Jungbauer	TOPIC 3 Kinetics & Catalysis 9 Chair: Guzman, Albert	JE-Energy Storage 3 Chair: Ma, Ding
			SOC-48691 High specific energy lithium-sulfur batteries based on advanced materials R. Chen, China PR
			SOC-21736 Nanoporous membrane formation and its application for energy storage W. Baoguo, B. Li, Z. Liu China PR

	ROOM A5	ROOM B1	ROOM B2
11 :30 - 13 :00 h	TOPIC 7.1-Resources Use & Sustainable Technologies 6 Chairs: H. VandenBerg, J Posada	TOPIC 6.4 M3C 2 Chair: B.Hitzmann, J. Glassey	JE-NC-Aerogels/ Hydrogels and Nanocrystals Chair: Chinga Carrasco, Merayo
	SOC-88081 Towards multipurpose biorefinery platforms for the valorisation of red grape pomace: production of a n-caproate highly concentrated stream and hydroxyhexanoate-rich polyhydroxyalkanoates G. Martinez, S. Puccio, S. Rebecchi, J. B. Domingos, L. Bertin, F. Fava Italy	**OC-90366 Leveraging Advanced Data Analytics to Improve Pharmaceutical Manufacturing** J. Peterson, T. Merz[2] United States of America	**KN-64981 Nanocellulose Aerogels as Universal Substrates for Functional Nanoparticle Devices and Tissue Engineering** E. Cranston, X. Yang, K. De France, D. Osorio, T. Hoare, S. Zhu, I. Zhitomirsky[1] Canada
	SOC-86711 Oxidative fast pyrolysis and chemical pretreatment as alternative processes to transform sugarcane bagasse into value-added products R. Soares, J. Fernandes, C. Oliveira, I. Almeida	**OC-19746 Handling parametric and measurement uncertainty for design space determination in pharmaceutical product development: a Bayesian approach** G. Bano, P. Facco, N. Meneghetti, F. Bezzo, M. Barolo Italy	**OC-82241 Development of stable CNF-aerogels for water reservoirs: effective and simple cross-linking strategies** M. Delgado-Aguilar, Q. Tarrés, H. Oliver-Ortega, S. Boufi, P. Mutjé[1] Spain
	SOC-77801 Sustainability in electronics industry: environmental effect of replacement of tin doped indium oxide (ITO) by zinc oxide (ZnO) M. Barecka, A. Ziemińska-Stolarska, I. Zbiciński Poland	**OC-33836 Process Monitoring with Imaging Flow Cytometry – a Machine Learning Approach** D. Pischel, J. Buchbinder, R. Flassig, I. Lavrik, K. Sundmacher[2] Germany	**OC-81691 Tailored rheological properties of cellulose nanofiber hydrogels for 3D printing** J. Hyun S. Shin Korea, South

	ROOM A5 (Cont.)	ROOM B1 (Cont.)	ROOM B2 (Cont.)
11 :30 - 13 :00 h	TOPIC 7.1-Resources Use & Sustainable Technologies 6 Chairs: H. VandenBerg, J Posada	TOPIC 6.4 M3C 2 Chair: B.Hitzmann, J. Glassey	JE-NC-Aerogels/ Hydrogels and Nanocrystals Chair: Chinga Carrasco, Merayo
	SOC-71911 Green Processing Of Shrimp Shells In Hong Kong L. Koong, H. Wong, G. Mckay, C. Hui[1] Hong Kong	**OC-78346 Towards Quality by Control of Mammalian Cell Culture Bioprocesses** W. Sommeregger, K. Kandra, B. Sissolak, G. Berghammer, P. Pino-Grace, M. von Stosch, G. Striedner[2] Austria	**OC-72571 Thermodynamic study of the interaction of Bovine Serum Albumin with cellulose nanocrystals** S. Lombardo, W. Thielemans[2] Belgium
	SOC-63886 Kinetics and mathematical modeling of the extraction of algal polysaccharides R. Pezoa Conte, A. Leyton, A. Baccini, P. Mäki-Arvela, H. Grénman, C. Xu, S. Willför, J. Mikkola[1] Finland	**OC-61866 Modelling aspect of hollow-fiber membrane bioreactor for mammalian cell cultivation** E. Guseva, N. Menshutina, R. Safarov, I. Kazeev Russia	**OC-46331 Surface Engineering of Cellulose Nanocrystals via Controlled Radical Polymerization** J. Zoppe, O. Rojas, H. Klok[3] Switzerland
	SOC-59836 Multi-scale phenomena in two-phase enzymatic hydrolysis of hemicellulose for biofuel production S. Dutta, S. Chakraborty India	**OC-85926 Mechanistic model-based control of pilot scale fed-batch fermentation processes.** L. Mears, S. Stocks, M. Albaek, B. Cassells, G. Sin, K. Gernaey[3] Denmark	
	SOC-54056 Continuous Hydrodeoxygenation of Pyrolysis Oil from the bioCRACK Process K. Treusch, N. Schwaiger, J. Ausserleitner, B. Hammerschlag, R. Nagl, T. Sterniczky, M. Siebenhofer, P. Pucher[2], A. Huber[3] Austria		
	SOC-50961 Woody and agricultural biomass torrefaction: a new approach to model solid conversion and volatiles formation based on biomass extracted components M. González Martínez, C. Dupont, S. Thiéry, X. Meyer, C. Gourdon[1], France		

	ROOM A5 (Cont.)	ROOM B1 (Cont.)	ROOM B2 (Cont.)
11 :30 - 13 :00 h	TOPIC 7.1-Resources Use & Sustainable Technologies 6 Chairs: H. VandenBerg, J Posada	TOPIC 6.4 M3C 2 Chair: B.Hitzmann, J. Glassey	JE-NC-Aerogels/ Hydrogels and Nanocrystals Chair: Chinga Carrasco, Merayo
	SOC-45766 Performance of a smebr system for obtaining high quality effluents in wastewater treatment. L. Mendes Predolin, M. Moya-Llamas, A. Trapote Jaume, D. Prats Rico, Spain		
	SOC-40911 Sustainable regenerative process for the recovery of heavy metal from ionic liquid E. Othman, H. Miedema, A. Ham, van der, S. Kersten[3] Netherlands		
	SOC-21796 Green Chemical Bioprocesses based on Sponge-Like Ionic Liquids P. Lozano, J. Bernal, S. Nieto, C. Gomez, A. Nicolas, G. Sanchez-Gomez[2] Spain		

	ROOM C1
11 :30 - 13 :00 h	ROUND TABLE- Chemical Engineering in energy and enery in chemical engineering, challenges and opportunities

	ROOM B3	ROOM B4	ROOM C2
11:30 - 13:00 h	JE-AOPs- Degradation of Priority and Emerging Pollutants Chair: Barcelo, Amorin	TOPIC 7.4 &7.5 Soil Remediation & Wastes 2 Chair: Castelo-Grande, Martinez de la Ossa	E-ESCAPE27 T1.- Modeling and Simulation Chairs: Prof. Ian Cameron and Prof. Brent Young
	OC-88786 Cost estimation and economic evaluations of advanced oxidation processes for emerging water pollutants. Y. Adewuyi United States of America	**OC-84391 Comparison of standard economic evaluation methods with post-implementation data for energy efficiency projects** I. Kantor, F. Maréchal Switzerland	11:50 Efficient Surrogate Model Development: Optimum Model Form Based on Input Function Characteristics 457 **Sarah E. Davis, Selen Cremaschi and Mario R. Eden**
	OC-69416 Coupling biological processes with UV/H2O2 for the removal of metroprolol and metroprolol acid from water R. Gonzalez-Olmos, A. Benito, J. Mir-Tutusaus, M. Sarrà, G. Caminal, A. Jaén-Gil, G. Buttiglieri, M. Villagrasa, S. Rodríguez-Mozaz, D. Barceló	**OC-83711 Anaerobic digestion of lipid extracted sewage sludge from waste water treatment plant with residual hexane** E. Torrens, A. Restrepo-Montoya, M. Caporgno, F. Stüber, A. Fortuny, A. Fabregat, J. Font, J. Giralt, C. Bengoa Spain	12:10 Mixed-Integer MultiParametric Approach based on Machine Learning Techniques 451 **Ahmed Shokry, Sergio Medina-González and Antonio Espuña**

	ROOM B3 (Cont.)	ROOM B4 (Cont.)	ROOM C2 (Cont.)
11:30 - 13:00 h	JE-AOPs- Degradation of Priority and Emerging Pollutants Chair: Barcelo, Amorin	TOPIC 7.4 &7.5 Soil Remediation & Wastes 2 Chair: Castelo-Grande, Martinez de la Ossa	E-ESCAPE27 T1.- Modeling and Simulation Chairs: Prof. Ian Cameron and Prof. Brent Young
	OC-51131 Comparative Energy Assessment of Two UV Light Advanced Oxidation Processes M. Rivero, S. Dominguez, I. Ortiz, L. Rancaño[2] Spain	**OC-78066 Cyclones Enable Efficient Utilization Of Waste Heat For Sludge Drying** M. Mäkelä, A. Grimm, S. Larsson Sweden	12:30 Automatic Generation of Simulation Code for Embedding Custom Unit Operations in CAPE Software 463 **Gregor Tolksdorf, Erik Esche, Günter Wozny and Jens-Uwe Repke**
	OC-49931 Degradation of the herbicide metribuzin by electrochemical advanced oxidation processes using a boron-doped diamond anode D. Guelfi, F. Gozzi, S. De Oliveira, A. Machulek Jr., E. Brillas, I. Sirés[2] Brazil	**OC-77881 Valorisation of sewage sludge and biomass fly ash into low-impact fertilizer and construction material** null Encinas, A. Ciruelos, M. Gómez-Cardoso, R. Sánchez, M. Carmona, M. Bueno, A. Cid, J. Martínez, P. Mora[6] Spain	12:50 Enhanced Procedure for Simultaneous Synthesis of an entire Total Site 427 **Andreja Nemet and Zdravko Kravanja**
	OC-91616 Removal of pharmaceuticals from hospital wastewater via ozone/UV on pilot scale K. Van Eyck, T. Scheers, G. Loos, A. Van Schepdael, E. Adams, B. Van der Bruggen, D. Cabooter3, R. Dewil3 Belgium	**OC-77821 Catalytic cracking of HDPE pyrolysis waxes under FCC conditions: effect on the catalyst deactivation** E. Rodríguez Sáez, J. Valecillos, null Ibarra, P. Castaño, J. Bibao, J. Arandes Spain	
	SOC-87206 Application of chemical-less UVC/VUV for enhanced degradation and mineralization of sulfamethoxazole: Comprehensive evaluation and mechanism determination M. Moradi, G. Moussavi Iran	**SOC- 71516 Determination of kinetic parameters of bisphenol A removal using laccase** Z. Ghobadi Nejad, S. Borghei, S. Yaghmaei, M. Ghalebani, M. Khoeini[3], Iran	
	SOC-69521 First assessment of water ozonation applied to highly toxic methiocarb removal A. Cruz, C. Sans, S. Esplugas Spain		

	ROOM B3 (Cont.)	ROOM B4 (Cont.)	ROOM C2 (Cont.)
11:30 - 13:00 h	JE-AOPs- Degradation of Priority and Emerging Pollutants Chair: Barcelo, Amorin	TOPIC 7.4 &7.5 Soil Remediation & Wastes 2 Chair: Castelo-Grande, Martinez de la Ossa	E-ESCAPE27T1.- Modeling and Simulation Chairs: Prof. Ian Cameron and Prof. Brent Young
	SOC-90656 Preliminary assessment of different treatments to remove emerging pollutants from irrigation water in the western Bogota Savanna P. Cubides, M. Bustos, J. Ramírez, F. Aguilar, A. Botero, F. Hernández[3] Colombia		
	SOC-58741 Degradation and toxicity removal of fungicide Carbendazim by Advanced Oxidation Processes E. Pinheiro Costa, M. Vieira Martins Starling, D. Dias da Costa, M. Pio Viana Diniz, L. Valéria de Souza Santos, M. Maria Diniz Leão[1], C. Costa Amorim[1] Brazil		
	SOC-75391 UVA and visible light photocatalysis of 17β-estradiol in different water matrices by Au-TiO2 catalysts and the identification of degradation by-products K. Sornalingam, J. Zhou, A. McDonagh Australia		
	SOC-61211 Evaluation of the byproduct formation in the catalytic ozonation of residual pharmaceutical compounds in waste water S. Saeid, P. Tolvanen, M. Kråkström, J. Mikkola, T. Salmi, N.Kumar Finland		

	ROOM C3	ROOM C4	ROOM C5
11:30 - 13:00 h	JE-ESCAPE27 T4.- Process Monitoring and Control Chairs: Prof. Constantinos Theodoropoulos and Dr. Gerard Escudero	JE-ESCAPE27 T8.- CAPE/PSE Education/Training Chairs: Prof. Henrique Matos and Prof. Daniel Lewin	JE-ESCAPE27 T2.- Synthesis and Design Chairs: Dr. Petrica Iancu and Dr. Giulia Bozzano
	11:50 An Efficient Polynomial Chaos Expansion Strategy for Active Fault Identification of Chemical Processes 1675 **René Schenkendorf, Xiangzhong Xie and Ulrike Krewer (René Schenkendorf)**	11:50 **EURECHA Student Contest Award 2017**	11:50 Computational chemical product design problems under property uncertainties 973 **Jérôme Frutiger, Stefano Cignitti, Jens Abildskov, John M. Woodley and Gürkan Sin**
	12:10 Active Fault Detection and Identification using Transient Data 1687 **Kyle A. Palmer and George M. Bollas (George M. Bollas)**	12:00 Support of Education in Process Simulation and Optimization via Language Independent Modelling and Versatile Code Generation 2929 **Erik Esche, Gregor Tolksdorf, Sandra Fillinger, Henning Bonart, Günter Wozny and Jens-Uwe Repke**	12:10 The Chemical Product Simulator – ProCAPD 979 **Sawitree Kalakul, Mario R. Eden and Rafiqul Gani**
	12:30 Use of Discrete-Event Dynamic Systems for HAZOP Analysis 1699 **Mandar N. Thombre and Heinz A. Preisig (Mandar N. Thombre)**	12:30 Discrete optimization in the chemical engineering curriculum 2947 **Fernando P. Bernardo and Nuno M. C. Oliveira**	12:30 An Integrated Methodology for Emulsified Cosmetic Product Formulation Using Integer Programming with Logical Constraints 985 **Javier A. Arrieta-Escobar, Fernando P. Bernardo, Alvaro Orjuela, Mauricio Camargo and Laure Morel**
	12:50 Toward Online Explore of Concept Drift for Fault Detection of Chemical Processes 1657 **Mohammad Hamed Ardakani, Mahdieh Askarian, Gerard Escudero, Moisès Graells and Antonio Espuña (Mahdieh Askarian)**	12:50 Web-based Operator Training System 2935 **Manel Serra, Erika Franco, Luis Rumi, José María Ferrer and José María Nougués**	12:50 gSAFT: Advanced physical property prediction for process modelling 1003 **Thomas Lafitte, Vasileios Papaioannou, Simon Dufal and Constantinos C.**
11:00 - 11:30 h	COFFEE – POSTERS		

	ROOM C6	ROOM C7	ROOM C8
11:30 - 13:00 h	JE- IPIC Batch to Continuous 3 Chair: X.W.Ni y I. Plazl	TOPIC 3 Multiphase Flow & Reactors 2 Chair: van Sint Annaland, Yoshikawa	TOPIC 7.7-Capture, Storage & Use of CO2 2 Chair: Fujiki, Albo
	KN – 44961 Process Intensification by Introducing a Continuous Fluorination Using Anhydrous Hydrogen Fluoride C. Schnider, T. Grützner, A. Klein, A. Hormes Switzerland	**OC-34186 Novel designed porous reactors for C-N cross coupling reactions** A. Potdar, L. Thomassen, S. Kuhn[1] Belgium	**OC-77426 Public awareness and acceptance of carbon capture and utilisation** A. Azapagic, S. Perdan, C. Jones[3] United Kingdom
	OC – 91216 Batch–to–Conti Transfer of the Production of a Highly Viscous Copolymer System T. Goerke, S. Engell, Germany	**OC-60791 Combined effect of hydrodynamic and physico-chemical conditions on latex flocculation in a Taylor-Couette reactor** L. Guérin, C. Coufort-Saudejaud, A. Liné, C. Frances France	**OC-76116 Multi program platform for enhanced modelling and techno-economic assessment of CO2 to bio-materials conversion by cyanobacteria.** N. EL BAHRAOUI, J. Dupuy, F. Acien Fernandez, F. Grondahl, R. Rivera Tinoco, J. Chaouki[2] France
	OC – 48541 Intensification of cyclic carbonate synthesis from epoxides and CO2 using tube-in-tube gas/liquid microreactor A. Rehman, A. Lopez Fernandez, A. Harvey[2] United Kingdom	**OC-39021 Semi-continuous and continuous furfural production with simultaneous nitrogen stripping** V. Krzelj, J. van Kampen, F. Neira d'Angelo, J. Schouten, J. van der Schaaf, Netherlands	**OC-73716 Experimental investigation of the reverse water-gas shift reaction at high temperature and elevated pressure** S. Adelung, T. Ascher, F. Klein, R. Dietrich Germany
	OC – 63756 Integrated Design and Analysis of Chemical Production from Biomass Feedstocks A. Athaley, P. Annam, B. Saha, M. Ierapetritou[1] United States of America	**OC-67971 Study of the viability of Pinner reaction in flow** N. Ferrer, E. Serra, R. Nomen, J. Sempere Spain	**OC-71726 Effect of Si/Al ratio in faujasites for post combustion CO2 capture via pressure and temperature swing adsorption processes** D. Bahamon, H. Prats, G. Alonso, X. Giménez, P. Gamallo, R. Sayós, Spain
	SOC – 92211 An investigation on the effect of milli-mixer numbering-up on LDHs production with novel flow synthesis method C. Li, A. van Veen United Kingdom	**OC-38746 High Throughput Preparation of Magnesium Hydroxide Flame Retardant via Microreaction Technology** M. Yang, M. Ren, G. Chen, China PR	**OC-67641 Promising new materials for CO2 capture: An overview of the application of encapsulated Ionic liquids (ENIL)** C. Moya, J. Palomar, J. Lemus, M. Larriba, N. Alonso-Morales, M. Gilarranz, J. Rodriguez Spain

	ROOM C6 (Cont.)	ROOM C7 (Cont.)	ROOM C8 (Cont.)
11:30 - 13:00 h	JE- IPIC Batch to Continuous 3 Chair: X.W.Ni y I. Plazl	TOPIC 3 Multiphase Flow & Reactors 2 Chair: van Sint Annaland, Yoshikawa	TOPIC 7.7-Capture, Storage & Use of CO2 2 Chair: Fujiki, Albo
	SOC – 78126 Numerical and experimental heat transfer studies in millimetric square channels H. Shi, N. Di Miceli Raimondi, M. Cabassud, C. Gourdon France	**OC-79631 Operando determination of the liquid-solid mass transfer during 1-octene hydrogenation** Q. Zheng, F. Abegao, A. Sederman, L. Gladden[1] United Kingdom	**OC-62261 Managing the Energy Transition towards 2050: Carbon Capture and Storage – Challenges and Opportunities** G. Maitland United Kingdom
	SOC - 77091 novel embedded ionic liquid-type membrane-cathode assembly for a continuous up-flow microbial fuel cell M. Salar García, V. Ortiz Martínez, Z. Baicha, A. Pérez de los Ríos, F. Hernández Fernández[1] Spain		**SOC- 98686 Development of Self-Standing MOF Monoliths and Evaluation of Their CO2 Adsoprtion Performance** H. Thakkar, S. Eastman, A. Rownaghi, F. Rezaei, United States of America

	ROOM D1	ROOM D2	ROOM D3
11:30 - 13:00 h	JE-CFD Use of CFD to Improve Chemical Processes 5 Chair: Nunhez, Patwardhan	JE-ESCAPE27 T7.- CAPE Applications Addressing Global Grand Challenges Chairs: Prof. Francois Marechal and Dr. Elisabet Capon-Garcia	TOPIC 5.3-Polymer & Composites 2 Chair: Cunningham
	KN-77041 **The Influence of Meso-scale Flow Structure on Transport Phenomena in a Circulating Fluidized Bed** B. Hou, X. wang, H. Li[3] China PR	11:50 Model-Based Optimization of Battery Energy Storage Systems 2563 **Leonardo K. K. Maia, Zeynep Güven, Fabio La Mantia and Edwin Zondervan**	**KN-53061** **Polymer Reaction Engineering-based Design and Production of Dispersed Hybrid Polymers** M. Paulis, J. Asua Spain
	OC-30001 CFD Simulation of Heat transfer in Fischer Tropsch Synthesis Fixed Bed Reactor J. CHANG South Africa	12:10 Integration of Decision Tools in EMS 2467 **Fernán Serralunga, Juan P. Ruiz, Diego Ruiz and Carlos Ruiz**	**OC-81461 Crystallization properties of nylon 6/66 copolymer by in-situ copolymerization** L. Zhao, J. Tang, Z. Xi, China PR
	OC-49046 CFD study on non-Newtonian liquid flow in periodic packed bed reactors S. Dasgupta, A. Atta India	12:30 A systems engineering framework for application-dependent identification and design of electrochemical energy conversion systems 2587 **Deepa Elizabeth Eapen and Raghunathan Rengaswamy**	**OC-22116 Synthesis of a P/N/S Phosphazene-containing Nanotube and its Application on Epoxy Resin** H. Ma, S. Zhao, H. Qu, G. Ma, J. Xu, China PR

	ROOM D1 (Cont.)	ROOM D2 (Cont.)	ROOM D3 (Cont.)
11:30 - 13:00 h	JE-CFD Use of CFD to Improve Chemical Processes 5 Chair: Nunhez, Patwardhan	JE-ESCAPE27 T7.- CAPE Applications Addressing Global Grand Challenges Chairs: Prof. Francois Marechal and Dr. Elisabet Capon-Garcia	TOPIC 5.3-Polymer & Composites 2 Chair: Cunningham
	OC-51811 Fluid dynamic comparison among hydrotreating reactors A. Oliveira Silva, J. Nunhez Brazil		**OC-81761 Modification of Polyglycolic acid (PGA) scaffolds by incorporating tripolyphosphate micro-granules for regenerative medicine** China PR
	SOC-68231 CFD studies of chemical looping combustion in a double looping fluidized bed reactor Y. zhang, H. Jakobsen, Z. Chao Norway		
	SOC-92226 Three-Dimensional Computational Fluid Dynamics Modelling of a Co-Current Laboratory-Scale Spray Dryer for Manufacture of Skim Milk Powder M.Naghshineh, H. Van den Akker, E. O'Reilly, M.Sajjia, G.M. walker		
	SOC-63321 Simulation in the Process Industry: From Process Understanding to Designing an Efficient Process R. Aglave, T. Eppinger		

	ROOM D4	ROOM D5	ROOM D6
11:30 - 13:00 h	TOPIC 2 Adsorption Chair: Kockmann, Alopaeus	JE-PARMAT Mechanics of Particulate Materials Chair: Kacianauskas, Stasiak	ICOSSE 6 Bringing Sustainability to the Mainstream 2 Session Chairs: Bryony DuPont and Yinlun Huang
	OC-22041 Preparation and adsorption properties of phosphonate functionalized magnetic silica nanoparticles for Nd3+/Y3+ recovery Y. Wang, H. Katepalli, T. Hatton, Y. Wang[1] China PR	**KN-37631 Load-Dependent Contact Mechanics of Particulate Assemblies: From Smooth Spheres to Multivariate Shapes with Structured Surfaces** U. TUZUN United Kingdom	**OC-91476 Multi-lifecycle Product Design Optimization Considering Reuse, Remanufacturing and Recycling** R. Aydin, A. Brown, F. Badurdeen United States of America
	OC-39196 Study of adsorption isotherms for adsorbing NOx and CO on MFI ZSM-5 and MOR zeolites C. Vallieres[1], F. Delachaux, H. Monnier[3] France	**OC-63931 Assessment of predicting methods for the air assisted discharge of pharmaceutical powders** D. Barletta, D. Garofalo, T. Chitu, P. Kulkarni, S. Taddei, M. Poletto[1] Italy	**OC-65756 Life Cycle Assessment of Dairy Derivatives – Towards an eco-design of the pasteurization process** S. DUQUESNE, M. Jimenez, G. Delaplace, C. Gruescu, S. Zouaghi, S. Tamizuddin Gillani[5] France

	ROOM D4 (Cont.)	ROOM D5 (Cont.)	ROOM D6 (Cont.)
11:30 - 13:00 h	TOPIC 2 Adsorption Chair: Kockmann, Alopaeus	JE-PARMAT Mechanics of Particulate Materials Chair: Kacianauskas, Stasiak	ICOSSE 6 Bringing Sustainability to the Mainstream 2 Session Chairs: Bryony DuPont and Yinlun Huang
	OC-63506 Activated Carbon From Colombian Coals For Gold Adsorption From Cyanide Solutions K. Martinez Mendoza, J. Barraza, K. Morales, N. Marriaga, F. Machuca Colombia	**OC-76296 A global and local study of vibrated granular suspensions** N. Gaudel, S. Kiesgen de Richter, N. Louvet, M. Jenny, S. Skali-Lami LEMTA - Université de Lorraine - CNRS UMR 75, France	**OC-53361 Sustainability Function Deployment: Using QFD to create socioeconomic value** M. Bubicz, A. Santos, B. Mota, C. Silva, A. Barbosa-Póvoa, A. Carvalho[2] Portugal
	OC-85011 Adversities in Adsorption J. Scholtz South Africa	**OC-40411 rheology of vibrated granular matter** P. Marchal, C. hanotin, N. Louvet, M. JENNY, N. GAUDEL[3], S. kiesgen De Richter[3] France	**OC-80506 Methodologies for Life Cycle Inventory Generation for Active Pharmaceutical Ingredients (APIs)** A.Parvatker, M.Eckelman
	OC-86881 Membrane operations for wastewater treatment from power industry A. Ali, A. Criscuoli, F. Macedonio, E. Drioli Italy	**SOC-79446 A comparison between interparticle forces estimated with direct powder shear testing and with sound assisted fluidization** C. Roberto, M. Poletto, D. Barletta, F. Raganati, P. Ammendola, P. Lettieri[1] United Kingdom	**OC-41026 Electrochemical reduction of co2 to formate: a new zero-gap electrochemical reactor approach** A.Del Castillo, M.Alvarez-Guerra, L.García-Cruz , J. Solla-Gullón, V.Montiel, A. Irabien
	OC-90886 Fast Pressure Swing Adsorption process using MOF monolith C. Grande Norway	**SOC-83801 Mechanical multi-layered particle model for baker's yeast (Saccharomyces Cerevisiae) cells** A. Ramanavičius, L. Mikoliūnaitė, R. Vilkončius, I. Morkvėnaitė-Vilkončienė, A. Stirkė[4], A. Jaras, R. Kačianauskas[3] Lithuania	
		SOC-40101 Analysis of packings of non-spherical particles using bonded-particle model M. Dosta, L. Puebla Germany	
		SOC-52541 Taylor-Couette instability in thixotropic yield stress fluids according a structural parameter model M. Jenny, S. Kiesgen de Richter, N. Louvet, Y. Dossmann, M. Ferrari, S. Skali-Lami France	

	ROOM D7	ROOM E7
11:30 - 13:00 h	JE-Electrochemical- Round Table Waste & Wastewater Chair: Martínez-Huitle SOC- 7.5min	**Workshop** TOP-REF Outcomes: Indicators, Methodology, Tools and Standard for resources and process optimization
	SOC-58866 Electrochemical behavior and abatement of glyphosate on Pt and Pt-doped SnO2-Sb electrodes R. Berenguer, M. Fernández, F. Huerta, A. La Rosa-Toro, E. Morallón[1] Spain	
	SOC-70356 Modeling and optimization of the electrochemical process for removing the reactive textile dye Black 5 M. Leite, D. Fernandes Viana, S. Soares Aristides, G. Richard Salazar-Banda Brazil	
	SOC-80436 4 Chlorophenol oxidation by Electro-Fenton and Electro-Fenton-like at laboratory scale and pilot scale with simultaneous electrogeneration of H2O2 and catalyst G. Santana-Martínez, G. Roa-Morales, P. Balderas, C. Barrera-Díaz, R. Romero, R. Natividad Mexico	
	SOC-60321 Potentialities of boron doped diamond electrode for the electrochemical oxidation of dimethoate Y. AIMER, O. BENALI, K. GROENEN SERRANO[3] Algeria	
	SOC-58566 Interfering effect of propylene glycol on the electrochemical degradation of methyl paraben D. Dionisio, M. Rodrigo[2], A. Motheo[3] Brazil	

	ROOM D7 (Cont.)	ROOM E7 (Cont.)
11:30 - 13:00 h	JE-Electrochemical- Round Table Waste & Wastewater Chair: Martínez-Huitle SOC- 7.5min	**Workshop** TOP-REF Outcomes: Indicators, Methodology, Tools and Standard for resources and process optimization
	SOC-65856 Energy optimization of the electrochemical degradation of perfluorohexanoic acid by its integration with NF/RO A. URTIAGA, A. Soriano, D. Gorri Spain	
	SOC-40936 Challenges for electrochemists in water remediation N. Yasri, E. Roberts Canada	
	SOC-74141 Electrochemical Regeneration of Graphene Based Materials Loaded with Methylene Blue F. Sharif, E. Roberts University of Calgary, Canada	
	SOC-54186 Coupling electrocoagulation with electrochemical advanced oxidation processes for the removal of organic micropollutants from wastewater treatment plant effluents Z. Ye, . Brillas, P. Cabot, F. Centellas, I. Sirés Spain	
	SOC-59301 Adsorption and electrocoagulation/ adsorption systems for the treatment of olive oil mill wastewater N. Flores, E. Roberts, F. Sharif, P. Cabot, F. Centellas, E. Brillas, I. Sirés[1] Spain	
13:00 - 14:30 h	Lunch	

	MAIN AUDITORIUM
14:30 - 15:30 h	PLENARY SESSION **P.V. Dankwerts Memorial Lecture. Rakesh Agrawal** Winthrop E. Stone Distinguished Professor in the School of Chemical Engineering at Purdue University, USA. "Challenges and Opportunities for Chemical Engineering in an Emerging Solar Economy"

	ROOM C1		
14:30 - 15:30 h	PLENARY ICOSSE. **"Circular Cities - The Case of the Amsterdam Metropolitan Area.** J.Cramer		
15:30 - 16:00 h	COFFEE – POSTERS		
	ROOM A2	**ROOM A3**	**ROOM A4**
16:00 - 17:30 h	TOPIC 6.3 Env. Biotech. 1 Chair: J. Lema, A.Mohedano	TOPIC 3 Kinetics & Catalysis 10 Chair: Al-Khatib, Fujiwara	JE-Energy Storage 4 Chair: Yu, Li KN 18 min SOC 9min
	OC-91281 Influence of transient anoxia on NOB suppression in one-stage nitritation-anammox reactor at mainstream wastewater T. Vitor Akaboci, M. Ruscalleda, M. Balaguer, J. Colprim[2] Spain	**OC-33886 Phenol hydrodeoxygenation over a suported copper catalyst** C. Templis, E. Zerva, N. Papayannakos Greece	**KN-47341 Recent progress on high-temperature thermal energy storage with application to advanced adiabatic compressed air energy storage** A. Haselbacher, V. Becattini, L. Geissbühler, G. Zanganeh, J. Marti, S. Ströhle, A. Steinfeld[1] Switzerland
	OC-90851 Microbial Desalination Cells for Low Energy Drinking Water: main concepts, advantages and limitations for real scale implementation. J. Ortiz, M. Marina Ramirez-Moreno, A. Abraham Esteve-Núñez[2], P. Rodenas Motos Spain	**OC-58096 Pd-substituted mixed Ce-Sn-Oxides for Heck Reaction** B. Grabner, M. Filzwieser, H. Gruber-Woelfler Austria	**SOC-47091 Potential to use Power-to-Gas for an interconnected Island Energy network** A. Chandrasekar, E. Syron, M. Ekhtiari, Ireland
	OC-82046 Phenylacetic acid metabolism in E. coli as a xenobiotic model degradation G. Lozano-Terol, J. Gallego-Jara, A. Ecija-Conesa, T. De Dieg, A. Manjon, M. Canovas, Spain	**OC-32316 Levulinic acid and γ-valerolactone hydrotreatment over sulphided NiMo/Al2O3: Thorough experimental and microkinetic in-silico study** M. Grilc, B. Likozar, Slovenia	**SOC-44756 Strontium Bromide/Natural graphite composite for high-performance thermochemical energy storage: formulation, characterization and cyclic performance** A. Cammarata, A. Sciacovelli, Y. Ding), United Kingdom
	OC-56086 Enzymatic hydrolysis of peat as a way of vegetable biomass saccharification A. Stepacheva, N. Lakina, A. Petrova, V. Doluda, M. Sulman Russia	**OC-31936 The influence of catalyst type and process conditions on the selectivity of mucic acid dehydroxylation towards adipic acid** B. Hočevar, M. Grilc, B. Likozar National Institute of Chemistry, Slovenia	**SOC-44391 Multiscale modelling tools for solar thermal energy collection and storage: An overview on recent advancements, challenges and perspectives** A. Cardellini, M. Fasano, M. Morciano, P. Asinari, E. Chiavazzo Italy

	ROOM A2 (Cont.)	ROOM A3 (Cont.)	ROOM A4 (Cont.)
16:00 - 17:30 h	TOPIC 6.3 Env. Biotech. 1 Chair: J. Lema, A.Mohedano	TOPIC 3 Kinetics & Catalysis 10 Chair: Al-Khatib, Fujiwara	JE-Energy Storage 4 Chair: Yu, Li KN 18 min SOC 9min
	OC-56356 The assessment of bioaugmented - moving bed biofilm reactor (MBBR) in micropollutants removal. C. ALBASI, S. ABTAHI FOROUSHANI, C. JOANNIS CASSAN, T. TROTOUIN, F. TERRISSE[4] France	**OC-36331 The influence of adsorption behavior on the formation of degradation intermediates: A case of photocatalytic degradation of diuron on ZnO** S. Meephon, T. Rungrotmongkol, N. Kaiyawet, S. Puttamat, V. Pavarajarn[1] Thailand	**SOC-40866 Large – scale vanadium redox flow battery development** E. García - Quismondo, I. Almonacid, J. Palma, E. Serrano, B. Ruiz, null Hernández, B. Oraá, V. Miroslavov, O. Cabrero, A. Sánchez[2] Spain
	OC-53901 Towards A Better Understanding Of The Relationship Between Floc Morphology And Operating Conditions In Activated Sludge Systems P. Oliveira, C. Coufort-Saudejaud, C. Frances, M. Alliet France		**SOC-38956 Rational synthesis of transition metal oxides and their applications for Li-ion storage** S. Tong, Q. Wu, J. Li, J. Yang, M. Wu China PR
			SOC-29631 The PCM/water nano emulsion for cooling storage applications X. Zhang, J. Wu, J. Niu[2] Hong Kong
			SOC-24376 Low Cost Materials for High Energy Sodium-ion Battery S. Chou Australia
			SOC-21451 P-doped Carbon Nanosheets from Carbon Dots for Advanced Sodium-Ion Batteries X. Ji, H. Hou, X. Qiu China PR
			SOC-23271 Transition metal sulfides for high energy all-solid-state lithium batteries X. YAO, X. XU, China PR
			SOC 70616 High Loading Si-based Eelectrodes and the Initial Irreversibility Compensation J.Yang Y.Bie, Z. Xu

	ROOM A5	ROOM B1	ROOM B2
16:00 - 17:30 h	PhD Workshop International Mobility	TOPIC 6.6 Microalgae Biotech. 1 Chairs: M. Eppink, J. Legrand	JE-NC-Production and Application of Cellulose Nanofibers Chair: Delgado-Aguilar, Rojas
		OC-67576 Sustainable integrated algae biorefinery for the production of bioactive compounds for agriculture and aquaculture (SABANA) G. Acien, J. Fernández-Sevilla, E. Molina Grima Spain	**OC-49061 Cellulose nanofiber production from olive tree pruning** F. Ursula, B. Wicklein, R. Martín-Sampedro, D. Ibarra, E. Castro, M. Eugenio[3], Spain
		OC-70311 Biodiesel from microalgae. How far are we from solving it? A. Robles-Medina, P. González-Moreno, L. Esteban-Cerdán, E. Navarro-López, M. Macías-Sánchez, M. Jiménez-Callejón, E. Hita-Peña, E. Molina-Grima Spain	**OC-20021 Cellulose nanofibers: a sustainable additive in recycled paper industry** A. Balea Martín, N. Merayo, A. Blanco, C. Negro Spain
		OC-70276 Progress towards microalgal dinoflagellate-based bioprocesses L. López-Rosales, A. Molina-Miras, M. Cerón-García, A. Sánchez-Mirón, F. García-Camacho, E. Molina-Grima Spain	**OC-76581 Ligno-micro/nanocellulose production from thermomechanical pulp by enzymatic hydrolysis** Q. Tarrés, H. Oliver-Ortega, M. Delgado-Aguilar, G. Bajul, J. Melbø, P. Mutjé, G. Chinga-Carrasco[3] Spain
		OC-72641 Novel open thin-layer cascade photobioreactors for saline microalgae production A. Apel, C. Pfaffinger, T. Severin, T. Brück, D. Weuster-Botz[1] Germany	**OC-81791 Refining as an energy efficient process to develop microfibrillated lignocellulose from TMP whitewater fines** T. Gunawardhana, P. Banham, D. Richardson, A. Patti, W. Batchelor[1] Australia
		OC-59776 Study of microalgae lysis by bead milling: a population balance approach R. ZINKONE, L. MARCHAL, J. PRUVOST France	**SOC-36576 It is really necessary high quality cellulose sources to produce cellulose nanocrystals to improve paper properties?** C. Campano, N. Merayo, R. Miranda, C. Negro, A. Blanco Spain
			SOC-44301 Laccase-assisted hydrophobization of films made from lignocellulosic nanofibres D. Filgueira, G. Chinga-Carrasco, D. Moldes[1] Spain

	ROOM A5 (Cont.)	ROOM B1 (Cont.)	ROOM B2 (Cont.)
16:00 - 17:30 h	PhD Workshop International Mobility	TOPIC 6.6 Microalgae Biotech. 1 Chairs: M. Eppink, J. Legrand	JE-NC-Production and Application of Cellulose Nanofibers Chair: Delgado-Aguilar, Rojas
			SOC-58116 Nanocellulose as hard template for creating hierarchies in microporous zeolites X. Fan United Kingdom
			SOC-30641 The role of nanocellulose dispersion on paper strength C. Campano, A. Balea, N. Merayo, A. Blanco, C. Negro Complutense University of Madrid, Spain
			SOC-59126 Optimization of Cellulose Nanocrystal Colloidal and Thermal Stability through Acid Hydrolysis with Phosphoric Acid O. Vanderfleet, M. Reid, D. Osorio, E. Cranston Canada
			SOC-86426 Probing interactions in nanocellulose mixtures using oscillatory shear rheology A. Swerin, A. Oko, J. Benjamins Sweden

	ROOM B3	ROOM B4	ROOM C2
16:00 - 17:30 h	JE-AOPs-Novel Reactor Configurations and Full Scale Applications Chair: Li Puma, Hermosilla	TOPIC 7.4 &7.5 Soil Remediation & Wastes 3 Chair: Makela, Fabregat	JE-ESCAPE27 T1.- Modeling and Simulation Chairs: Dr. Alexandra Elena Bonet Ruiz and Prof. Harvey Arellano-Garcia
	OC-80541 Intensification of advanced oxidation processes in micro and macro-scale reactors G. Li Puma, M. Lucas, N. Reis, R. Marotta[3] United Kingdom	**OC-72951 Valorization of Amazonian Biomass Waste Trough Fast Pyrolisis** Y. Villasana, J. Ábrego, F. Cazaña, F. Bimbela, L. Gandía, S. Armenise[1] Ecuador	16:30 Introducing Green GDP as an Objective to Account for Changes in Global Ecosystem Services Due to Biofuel Production 505 **Daniel J. Garcia and Fengqi You**

	ROOM B3 (Cont.)	ROOM B4 (Cont.)	ROOM C2 (Cont.)
16:00 - 17:30 h	JE-AOPs-Novel Reactor Configurations and Full Scale Applications Chair: Li Puma, Hermosilla	TOPIC 7.4 &7.5 Soil Remediation & Wastes 3 Chair: Makela, Fabregat	JE-ESCAPE27 T1.- Modeling and Simulation Chairs: Dr. Alexandra Elena Bonet Ruiz and Prof. Harvey Arellano-Garcia
	OC-92866 Intensification of UVC and UVC/H2O2 processes in aqueous media using an annular channel reactor: Design optimization and proof of concept V. Vilar, F. Moreira, A. Faria, E. Bocos, M. Pazos, A. Sanroman, M. Dias, J. Lopes, R. Boaventura[1] Portugal	**OC-67051 Towards Wastewater Biorefineries: integrated bioreactor and process design for combined water treatment and resource productivity** S. Harrison, B. Verster, T. Raper, M. Johnstone-Robertson South Africa	16:50 Carbon Arbitrage with Stationary Batteries in the City of London 529 **Mauricio Riveros, Miao Guo, Koen H. van Dam, Gonzalo Bustos and Nigel Brandon**
	OC-73321 Long Term Experience in Operation of an Advanced Oxidation Treatment Plant for Drinking Water M. Werderitsch Austria	**OC-60851 Influence of the nature of chlorine-containing compounds on the formation of HCl in syngas during the thermo-conversion of Refused Derived Fuels** R. SANI, E. Daouk, D. PHAM MINH, A. NZIHOU, T. Cutrad[2] France	17:10 Sustainable supply chain design and planning: the importance of life cycle scope definition 541 **Bruna Mota, Ana Carvalho, Maria Isabel Gomes and Ana Paula Barbosa-Póvoa**
	SOC-69011 Control of membrane fouling in water reuse with AOP-based pretreatments R. Gonzalez-Olmos, G. García, A. Penadés, A. Benito Spain	**OC-56791 Renewable biopolyols produced via two-stage crude glycerol mediated liquefaction of industrial biomass by-products** L. Jasiūnas, L. Miknius, Lithuania	17:30 Sustainability Assessment of an Integrated Economic-Ecologic-Social Model Under Time-Dependent Uncertainties 577 **Pablo Tenoch Rodriguez-Gonzalez, Vicente Rico-Ramirez, Ramiro Rico-Martinez and Urmila M. Diwekar**
	SOC-91421 Energy Evaluation Of Uva-Led Photo-Fenton Process In Continuous Mode J. CASAS, I. de la Obra, B. Esteban, J. Sánchez[2] Spain	**OC-55646 Nitrogen recovery using Microbial Electrolysis Cell** A. MORAN, M. SAN MARTIN, R. ALONSO, R. BARRIO, A. ESCAPA[2] Spain	
	SOC-92776 Multi-Stage Treatment Technology For Leachates From Urban Waste Landfills – Semi-Industrial Scale Application V. Vilar, A. Gomes, T. Silva, M. Foco, A. Fonseca, I. Saraiva, R. Boaventura[1] Portugal	**OC-52791 From LCO to diesel: HDS performance of CoMo, NiMo and NiW catalysts in the hydroprocessing of light cycle oil** A. Gutiérrez, R. Palos, J. Arandes, J. Bilbao Spain	

	ROOM B3 (Cont.)	ROOM B4 (Cont.)	ROOM C2 (Cont.)
16:00 - 17:30 h	JE-AOPs-Novel Reactor Configurations and Full Scale Applications Chair: Li Puma, Hermosilla	TOPIC 7.4 &7.5 Soil Remediation & Wastes 3 Chair: Makela, Fabregat	JE-ESCAPE27 T1.- Modeling and Simulation Chairs: Dr. Alexandra Elena Bonet Ruizand Prof. Harvey Arellano-Garcia
	SOC-80696 Solar irradiances on tilted and on horizontal planes for photochemical reactors. a mexico city study J. Morales Mejía, R. Almanza Salgado, L. Santiago Cruz[2] Mexico		
	SOC-82081 Understanding chloramine-driven advanced oxidation process for water reuse applications H. Liu, S. Patton, W. Li, K. Ishida[2] United States of America		

	ROOM C3	ROOM C4	ROOM C5
16:00 - 17:30h	JE-ESCAPE27 T3.- Planning and Scheduling Chairs: Prof. Luis Puigjaner and Prof. Carlos Alberto Mendez	JE-ESCAPE27 T6.- Concepts, Methods and Tools Chairs: Prof. Pascal Floquet and Prof. Hirokazu Sugiyama	JE-ESCAPE27 T2.- Synthesis and Design Chairs: Prof. Thokozani Majozi and Dr. Igor Plazl
	16:30 Hierarchical Waste Incineration Planning and Scheduling System for Industrial Operation Support 1327 **Matteo L. Abaecherli, Daniel Santos González, Samuel Perren, Elisabet Capón-García, Andrej Szijjarto and Konrad Hungerbühler**	16:30 Bayesian Multi-Objective Optimisation of Neotissue Growth in a Perfusion Bioreactor Set-Up 2155 **Simon Olofsson, Mohammad Mehrian, Liesbet Geris, Roberto Calandra, Marc Peter Deisenroth and Ruth Misener**	16:30 Computer Aided Synthesis of Innovative Processes: Renewable Adipic Acid Production 709 **Alessandro Rosengart, Maria-Ona Bertran, Flavio Manenti, Attilio Citterio, John M. Woodley and Rafiqul Gani**
	16:50 Stochastic Modeling Approach for Downstream Oil Supply Chain 1339 **Camilo Lima, Susana Relvas and Ana Paula Barbosa-Póvoa**	16:50 Dynamic Optimization of the Production of Monoclonal Antibodies in Semi-batch Operation 2161 **Chrysoula Dimitra Kappatou, Adel Mhamdi, Ana Quiroga Campano, Athanasios Mantalaris and Alexander Mitsos**	16:50 Optimization-based early phase design of a homogeneously catalysed process in a thermomorphic solvent system 715 **Francesco Benski, Corina Nentwich and Sebastian Engell**

	ROOM C3 (Cont.)	ROOM C4 (Cont.)	ROOM C5 (Cont.)
16:00 - 17:30h	JE-ESCAPE27 T3.- Planning and Scheduling Chairs: Prof. Luis Puigjaner and Prof. Carlos Alberto Mendez	JE-ESCAPE27 T6.- Concepts, Methods and Tools Chairs: Prof. Pascal Floquet and Prof. Hirokazu Sugiyama	JE-ESCAPE27 T2.- Synthesis and Design Chairs: Prof. Thokozani Majozi and Dr. Igor Plazl
	17:10 Hedging Against Uncertainty in Process Planning: A Data-Driven Adaptive Nested Robust Optimization Approach 1345 **Chao Ning and Fengqi You**	17:10 Investigating practical aspects of the exergy based multi-objective optimization of chemical processes 2173 **Carlos Andre Muñoz, Dries Telen, Philippe Nimmegeers, Lorenzo Cabianca, Filip Logist and Jan Van Impe**	17:10 Production Zone Method: a New Non-ideal Shortcut Method for Distillation Column Design 745 **Guillaume Worms, Michel Meyer, David Rouzineau and Mathias Brehelin**
	17:30 Water Security and Clean Energy, Co-benefits of an Integrated Water and Energy Management 1363 **Negar Vakilifard, Parisa A. Bahri, Martin Anda and Goen Ho**	17:30 Solving Dynamic Constraint Trajectory Optimization Problems by Applying the Concept of Pareto Frontiers 2197 **Jan C. Schöneberger and Armin Fricke**	17:30 Distillation Sequence Efficiency (DSE) Applied to Trains of Columns with Recycle Streams 751 **Jordi Bonet, Alex Parra Paz, Alexandra Elena Bonet-Ruiz, Valentin Plesu, Petrica Iancu and Joan Llorens**
	17:50 New Continuous-Time Scheduling Formulation for Multiproduct Pipelines 1381 **Pedro M. Castro and Hossein Mostafaei**	17:50 A Systematic Approach for the Optimal Design of an Off-Grid Polygeneration System using Fuzzy Linear Programming Model 2191 **Aristotle T. Ubando, Isidro Antonio Marfori III, Alvin B. Culaba, Jonathan R. Dungca, Michael Angelo B. Promentilla, Kathleen B. Aviso and Raymond R. Tan**	17:50 Multi-objective Optimization of a Methanol Synthesis Process Superstructure with Two-step Carbon Dioxide Consumption 721 **Juan D. Medrano, Rubén Ruiz-Femenia and José A. Caballero**

	ROOM C6	ROOM C7	ROOM C8
16:00 - 17:30 h	JE-IPIC-Modular Process Chair: A. Gorak, M.Cabassud	TOPIC 3 Multiphase Flow & Reactors 3 Chair: Shahzad, Al-Dahhan	TOPIC 7.7-Capture, Storage & Use of CO2-3 Chair: Gutierrez, de la Pena
	KN-59666 **Module-based plant design and equipment for small scale production in process industries** N. Kockmann, L. Hohmann, M. Eilermann, C. Post, H. Radatz, G. Schembecker, C. Bramsiepe[4] Germany	**OC-61781 Hydrodynamics of a Novel 8-type Connected Airlift-Driven Fluidized Bed Reactor** I. Mohammed, M. Schubert, U. Hampel[3] Germany	**OC-59436 Ca- and La-promoted Ni/BETA catalysts for CO2 methanation** A. Quindimil, B. Pereda-Ayo, J. González-Marcos, J. González-Velasco[2] Spain

	ROOM C6 (Cont.)	ROOM C7 (Cont.)	ROOM C8 (Cont.)
16:00 - 17:30 h	JE-IPIC-Modular Process Chair: A. Gorak, M.Cabassud	TOPIC 3 Multiphase Flow & Reactors 3 Chair: Shahzad, Al-Dahhan	TOPIC 7.7-Capture, Storage & Use of CO2-3 Chair: Gutierrez, de la Pena
	OC-61061 Scale-up of process intensified processes and products; How modularisation impacts development from lab to production H. Bottenberg, T. Ladrak Netherlands	**OC-85096 Effect of bubble morphology on hydrodynamics and mixing in bubble columns** D. Laupsien, A. LINE , A. COCKX France	**OC-53841 Enabling rigorous, multi-scale process optimization of flue gas scrubbing for CO2 capture** M. Gazzani, M. Miklautz, J. Pérez-Calvo, M. Mazzotti, E. Martelli, M. Amirkhosrow[3] Switzerland
	OC-33396 Application of Rotating Packed Beds to Liquid Phase Processes D. Wenzel, M. Skiborowski, A. Górak Germany	**OC-87461 Online monitoring and control of bubble size distributions in industrial bubbly flow applications** S. Maaß, R. Panckow, J. Emmerich[1] Germany	**OC-49616 Post-combustion CO2 capture by low-temperature steam-aided vacuum swing adsorption using a novel polyamine-based solid sorbent** J. Fujiki, H. Yamada, F. Chowdhury, R. Numaguchi, K. Yogo Japan
	SOC-54906 Performance of new composite facilitated transport membranes for olefin/ paraffin separation R. Zarca, A. Ortiz, D. Gorri, I. Ortiz Spain	**OC-21891 A study of gas-liquid flow regimes and mass transfer enhancement in various designs of oscillatory baffled reactors** S. Ahmed, A. Phan, A. Harvey United Kingdom	**OC-45381 In Situ Gasification Chemical Looping Combustion of different types of biomass** A. Pérez-Astray, T. Mendiara, M. Izquierdo, A. Abad, L. de Diego, F. García-Labiano, P. Gayán, J. Adánez Spain
	SOC-42976 Packings additive manufacturing for rotating packed beds K. Gladyszewski M. Skiborowski, A. Gorak Germany	**OC-39996 Factors Controlling Morphology of Fine Particles Crystallized in Gas-Dispersed Liquid Flow** K. TSUCHIYA, Y. MORI Japan	**OC-44606 CO2 capture by mesostructured siliceous adsorbents functionalized with amino groups** E. Sanz-Pérez, A. Arencibia, G. Calleja, R. Sanz Spain
	SOC-30886 Generation of an Equipment Module Database Based on Cluster Analysis of Industrial Applications M. Eilermann, C. Post, A. Tebbe, S. Leufke, D. Schwarz, G. Schembecker, C. Bramsiepe[2] Germany	**OC-29801 Modeling of complex liquid-solid flow of swelling particles in slurry loop reactors** R. Zhou, J. Chen, N. Yang, J. Li, A. Fernandez[2], P. RICOUX[3] France	**OC-43261 CO2 rate transfer to aqueous solutions of methyl diethanolamine, piperazine and their mixtures** R. DI FELICE, C. Costa, M. Oliva, P. Pagliai Italy
	SOC-24901 Chemical process intensification with multiphase microflows G. Luo, K. Wang, Y. Lu, China PR		

	ROOM D1	ROOM D2	ROOM D3
16:00 - 17:30 h	JE-CFD Use of CFD to Improve Chemical Processes 6 Chairs: Marcholi, Utikar	JE-ESCAPE27 T7.- CAPE Applications Addressing Global Grand Challenges Chairs: Prof. Zdravko Kravanja and Prof. Dominique Toye	TOPIC 5.3-Polymer & Composite 3 Chair: Kosek, Busch
	KN-89286 **Numerical Investigation of Compositional Multi-Fluids Flow in Heterogeneous Porous Media** J. Gomes, K. Christou, B. Lashore United Kingdom	16:30 Model-assisted operational design of bacterial PHA-production processes: the obstacle of heterogeneity inducing modules 2887 **Christos Chatzidoukas, Aristidis Kondylidis and Dimitrios Meimaroglou**	**KN-68786** **Nitroxide Mediated Macromolecular Design and engineering** A. Simula, N. Ballard, M. Aguirre, J. Leiza, S. Van es, J. Asua[1] Spain
	OC-26341 Validation of a population balance QMOM model applied to heterogeneous bubbly flows taking into account water contamination L. Gemello, F. Augier, D. Marchisio, C. Plais[2] Italy	16:50 Optimisation of microalgal starch formation for the biochemical production of biobutanol 2899 **Gonzalo M. Figueroa-Torres, Jon K. Pittman and Constantinos Theodoropoulos**	**OC-52661 Liquid phase migration in foam extrusion of cellulose paste** J. Wemmer, E. Windhab Switzerland
	OC-24731 CFD study of high pressure subcooled boiling flow in vertical tube using Eulerian-Eulerian two fluid model A. Patwardhan, C. Mali, V. V.[2] India	17:10 Uncertainty & Sensitivity Analysis of Economic Assessment of Lactic Acid Production from Crude Glycerol – Impact of Price Correlations 2911 **Carina L. Gargalo, Ana Carvalho, Krist V. Gernaey and Gürkan Sin**	**OC-62486 Production of energy by gasification using as raw material copolymers: The base case with pure raw material** J. Álvarez, E. Mogollón, R. Cardona, C. Botero, C. Cardona[2] Colombia
	OC-32931 Validation of CFD Modelling of Hydrocarbon Pool Fires B. Rengel, C. Mata, E. Pastor, E. Planas Spain		**OC-71676 Smolefin And Swile - Paradigm Shift In Polyolefin R&D And Quality Control** M. Schneider Switzerland
	OC-20141Experimental investigation of corners form effect on the turbulence parameters sequence of square cylinder A. Karga		**OC-32276 Dynamic Simulation of the Catalytic Ethylene Polymerization in a Series of Slurry Stirred Tank Reactors for the Production of Trimodal MWD Grades** P. Pladis, A. Baltsas, D. Meimaroglou[2], C. Kiparissides Greece

	ROOM D1 (Cont.)	ROOM D2 (Cont.)	ROOM D3 (Cont.)
16:00 - 17:30 h	**SOC-86041Modeling of substance migration in simulated biomedical systems** A.Adach		
	SOC-42171 Wall Effects CFD Analysis On Mass Transfer In A Tbr For An Hds Process M. Cordero[1], J. Uribe López, L. Zárate, E. Peralta Reyes, A. Regalado Mendez Mexico		

	ROOM D4	ROOM D5	ROOM D6
16:00 - 17:30 h	TOPIC 2 Separation 2 Chair: Alopaeus, Gorak	JE-PARMAT Biomass Handling & Processing Chair: Barletta, Parafiniuk	ICOSSE 7 Bringing Sustainability to the Mainstream 3 Chairs: A. Azapagic, L.Cucek
	OC-25291 Immobilized Amines for Sour Gas Processing J. Pieterse Netherlands	**OC-88356 Systematic analysis of continuum and single particle properties of bulk solids with high aspect ratios** S. Beitz, L. Torbahn, H. Zetzener, A. Kwade Germany	**OC-67941 Insights from modeling to support policy development and decision making in South Africa** Y. Lewis, B. Cohen South Africa
	OC-32081 Hybrid Separation System For Hydrogen Recovery From Natural Gas Grids M. Nordio, J. Meléndez, A. Pacheco Tanaka, M. Mulder, P. Bouwman, L. Raymakers, M. Van Sint Annaland, F. Gallucci Netherlands	**OC-84176 Experimental study of self-heating phenomenon at the reactor-scale. Safety assessment of a fixed-bed filled with torrefied wood chips** B. Evangelista, O. Bonnefoy, A. Govin, P. Arlabosse, S. Salvador, J. Dirion France	**OC-27016 Data Analysis of Global Waste Plastic Generation and Management** C. Joshi, J. Seay United States of America
	OC-41081 CO2-switchable solvents in fluid separations B. Schuur, M. Nijland, M. Blahusiak, A. Juan Netherlands	**OC-27196 Assessment of bulk elastic response to consolidation of biomass feedstocks** D. ILIC, K. Williams Australia	**OC-62316 Assessing the sustainability of community-based water purification technologies: a case study in West Bengal** R. Darton, T. Etmannski United Kingdom

	ROOM D4 (Cont.)	ROOM D5 (Cont.)	ROOM D6 (Cont.)
16:00 - 17:30 h	TOPIC 2 Separation 2 Chair: Alopaeus, Gorak	JE-PARMAT Biomass Handling & Processing Chair: Barletta, Parafiniuk	ICOSSE 7 Bringing Sustainability to the Mainstream 3 Chairs: A. Azapagic, L.Cucek
	OC-54541 Cyano-based ionic liquids as advanced materials for carbon monoxide purification with reactive separation processes G. Zarca, I. Ortiz, A. Urtiaga Spain	**OC-28501 Non-spherical particles shapes by applying low resolution spherical harmonics combined with least square approximations** U. Radvilaitė, null Ramírez-Gómez, R. Kačianauskas, D. Rusakevičius[1] Lithuania	**OC-70071 Characterization and Analysis of the Sustainability in the Forest Supply Chain** D. Rodrigues, A. Barbosa-Póvoa, A. Carvalho, A. Santos Portugal
	OC-67886 Using Multiscale Methodology for Evaluating the Potential Advantages of Ionic Liquids as Absorbents: Acetylene Case R. Santiago, C. Moya, D. Moreno, J. de Riva, J. Bedia, V. Ferro, J. Palomar Spain	**SOC-57846 Study of Silo Discharge using Different Biomass Materials** H. Salehi, M. Poletto, D. Barletta[2], S. Larsson[1] Sweden	**OC-90436 Accounting for the indirect environmental burdens in waste-to-energy flue gas cleaning: a sustainability assessment of dry acid gas removal systems** A. Dal Pozzo, D. Guglielmi, G.Antonioni, A. Tugnoli (Italy)
	OC-75326 A New Way To Reduce Tar In Syngas: Vapour Permeation E. Berger, G. Mauviel, A. Dufour, E. Favre, D. Roizard France	**SOC-37416 Quality monitoring and control in breakfast cereal processes using neural network convolutions of dynamic process data.** U. Tuzun.	
		SOC-37416 Quality Monitoring and Control In Breakfast Cereal Processes using Neural Network Convolutions of Dynamic Process Data U. Tuzun	
		SOC-26571 Mechanical characteristics of different kinds of pine biomass M. Stasiak, M. Molenda, M. Bańda, M. Gancarz, Poland	
		SOC-66071 Characterization of solids transport within flighted rotary kilns: Synthesis of numerous experiments and modeling M.Debacq,C. Haustant, S. Vitu, Jl.dirion	

	ROOM D7
16:00 - 17:30 h	JE-Electrochemical- Round Table Sustainability Chair: Urtiaga OC-20 min SOC-7.5 min
	OC-42066 Coal Electrolysis: Hydrogen Production, Advanced Materials and Mercury Removal G. Botte, United States of America

	ROOM D7 (Cont.)
16:00 - 17:30 h	JE-Electrochemical- Round Table Sustainability Chair: Urtiaga OC-20 min SOC-7.5 min
	OC-50921 Electrochemical oxidation of Glycerol: power -generating fuel-cell or add-value products? A. DE ANDRADE Brazil
	SOC-29441 Solar fuel generation by water photo-electrolysis and CO2 reduction: catalytic electrodes and cell design C. Ampelli, G. Centi, S. Perathoner Italy
	SOC-27816 Gas-phase CO2 electroreduction at Cu/ZnO-based electrodes I. Merino-Garcia, J. Albo, J. Solla-Gullón, V. Montiel, A. Irabien[1] Spain
	SOC-55841 Electrochemical reduction of carbon dioxide using Pt and Pb catalysts supported on CNT synthesized in supercritical media C. Jiménez, F. Martinez, J. Garcia, R. Camarillo, I. Asencio, J. Rincon University of Castilla-La Mancha, Spain
	SOC-33351 Electrochemical conversion of Carbon Dioxide: effect of operating parameters and of the reactor on the performances of the process. F. Proietto, S. Sabatino, B. Schiavo, O. Scialdone, A. Galia Italy
	SOC-26711 CO2 photocatalytic reduction by means of titania nanotubes synthesized with supercritical fluids R. Camarillo, V. Rodríguez, D. Rizaldos, C. Jiménez, F. Martínez, I. Asencio, J. Rincón Spain

	ROOM D7 (Cont.)		
16:00 - 17:30 h	JE-Electrochemical- Round Table Sustainability Chair: Urtiaga		
	SOC-31376 Scientific research and mathematical modeling of the laccase-based biofuel cell cathode function processes I. Arkadeva, V. Bogdanovskaya, V. Vasilenko, E. Koltsova, A. Skichko[1] Russia		
	SOC-25681 Towards the high efficiency by scaling-up miniaturized Microbial Fuell Cells S. MATEO, Y. Asensio, L. Justo, F. Carmen M, P. Cañizares, F. Fernández, M. Rodrigo Spain		

17:30 h **Awards & Closing Remarks**

17:30 h **Cheese& Wine Reception around the Posters**

20:30 h **GALA DINNER at Marqués de Comillas Hall, (Barcelona Maritim Museum)**

	ROOM A2	ROOM A3	ROOM A4
08:30 - 10:00 h	TOPIC 6.3 Env. Biotech. 2 Chair: J. Lema, A.Mohedano	TOPIC 6.4 M3C 3 Chair: J. Glassey, B. Hitzmann	TOPIC 3 High Pressure – Technology & Processes 1 Chair: Sans Sangorrin, A. Cocero
	OC-28441 Alternative start-up strategies for the bioelectrosynthesis of acetate A. Moran, R. Mateos, A. Sotres, M. San Martin, A. Escapa Spain	**OC-86136 Operational monitoring of phosphate and ammonium for an industrial fermentation process using infrared (IR) and near-infrared (NIR) spectroscopy** K. Pontius, M. Bevilacqua, K. Gernaey, A. Eliasson Lantz[1] Denmark	**OC-36871 Non steady-state high pressure reactors. The role of chemical engineers in optimizing current refining industry** M. Romero, J. Frontela, J. Lázaro Spain
	OC-63476 Anaerobic Membrane Bioreactor and Upflow Anaerobic Sludge Blanket treating phenolic wastewater: overcoming extreme salinity J. Munoz Sierra, M. Oosterkamp, W. Wang, H. Spanjers, J. van Lier[1] Netherlands	**OC-53906 Dynamic modeling and feeding optimization of basal salts in Pichia pastoris cultures for improved heterologous protein expression** R. Oliveira, J. Clemente, A. Cunha, R. Portela[3] Portugal	**OC-29416 Energy production from microalgae using supercritical water oxidation** F. Scargiali, A. Brucato, P. Rubio[2], G. Caputo[1] Italy
	OC-65186 Electrochemical-pH gradient in solid-state culture promotes emulsifier protein production capability of Aspergillus brasiliensis V. Sánchez-Vázquez, K. Shirai, I. González, M. Gutiérrez-Rojas Mexico	**OC-32371 Multidimensional data visualization and data mining for characterization of protein phase behavior** M. Klijn, J. Hubbuch1 Germany	**OC-76326 Use of supercritical carbon dioxide for extraction of proteins from halophilic fungi** M. Primozic, M. Colnik, Z. Knez, M. Leitgeb Slovenia
	OC-43851 Single-chamber microbial fuel cell and anaerobic digestion for the energetic valorization of household food wastes G. Antonopoulou, I. Ntaikou, A. Tremouli, S. Bebelis[3], G. Lyberatos[1] Greece	**OC-89851 Real-time monitoring of photoautotrophic microalgae growth in photobioreactor, based on gas analysis** M. Titica, B. Urbain, G. Cogne, J. Legrand[3] France	**OC-58776 Use of scCO2 as solvent for PLA functionalization via click chemistry** E. Gracia, I. Gracia, J. Rodríguez, M. García, A. Borreguero, A. De Lucas Spain
	OC-85021 Start-up of a partial nitritation-anammox system under saline conditions V. Angeles, A. Estrada García, A. Pedrouso Fuentes Spain	**OC-53106 Integration of microalgal culture in building façade the benefit of inducing interactions with the building for thermal regulation of photobioreactors** E. TODISCO, C. Thobie, F. Le Borgne, S. Durecu, H. Marec, B. Le Gouic, J. Pruvost[1] France	**OC-38886 Reactive Separation Employing Hybrid Synergy of Pressurized H2O-CO2 System** A. Quitain, A. Hashimoto, K. Kon, S. Yamafuku, M. Sasaki, T. Kida[1] Japan

	ROOM A2 (Cont.)	ROOM A3 (Cont.)	ROOM A4 (Cont.)
08:30 - 10:00 h	TOPIC 6.3 Env. Biotech. 2 Chair: J. Lema, A.Mohedano	TOPIC 6.4 M3C 3 Chair: J. Glassey, B. Hitzmann	TOPIC 3 High Pressure – Technology & Processes 1 Chair: Sans Sangorrin, A. Cocero
	OC-22536 Metabolic engineering for oil biodesulfurization J. García, I. Martinez, V. Santos, F. García-Ochoa, E. Díaz Spain	**OC-70996 Model based calibration of neuronal networks** O. Paquet-Durand, S. Assawajaruwan, B. Hitzmann Germany	**OC-78626 First Demonstration Plant for Combined Supercritical Water Oxidation and Gasification of Organic Wastewaters** P. Casademont Lanzat, B. García-Jarana, J. Benjumea, V. Vadillo, J. Sánchez-Oneto, J. Portela, E. Martínez de la Ossa Spain

	ROOM A5	ROOM B1	ROOM B2
08:30 - 10:00 h	TOPIC 3 Microreactors 3 Chairs: Hasebe, Vlachos	TOPIC 6.6 Microalgae Biotech. 2 Chairs: M. Eppinik, J. Legrand	JE-FIBRE SUSPENSIONS 1 Chairs: Marchioli, de La Fuente
	OC-78491 Preparation of Organic Colloids in a Hydrodynamic Flow Focussing Microreactor at Controlled Temperature P. García-Manrique, D. Cristaldi, G. Gutiérrez, M. Matos, C. Pazos, M. Blanco-López, X. Zhang Spain	**OC-82296 Microalgal antenna size reduction – implications for mass culture** M. Janssen, T. de Mooij, R. Wijffels Netherlands	**KN- 25721 New model of behaviour or pulp of paper flow** S. Skali Lami France
	OC-85811 Influence of hydrodynamics on reaction progress of CO2 absorption in caustic soda in Taylor flow regime in microchannels by means of spatially and temporally resolved in-situ laser Raman spectroscopy D. Schurr, D. Rieder, G. Rinke, R. Dittmeyer Germany	**OC-39266 Understanding microalgae lipids recovery by membrane processes: cross-flow filtration of a representative synthetic mixture (o/w emulsion)** E. Clavijo, L. Villafaña Lopéz, S. Liu, P. Bourseau, M. Frappart, C. Monteux, E. Couallier[1] France	**OC-27756 Analysis of Rheology and Wall Depletion of Microfibrillated Cellulose Using Optical Coherence Tomography** J. Lauri, A. Koponen, S. Haavisto, J. Czajkowski, T. Fabritius[1] Finland
	OC-27166 Effective production of 5-hydroxymethylfurfural from saccharide by biphasic reaction system using a microreactor Y. Muranaka, R. Masaki, T. Maki, H. Nakagawa, K. Mae Japan	**OC-67546 R&D Platform "Las Palmerillas" for industrial development of microalgae based processes** G. Acien, A. González Céspedes, J. Magan Cañadas, J. Fernandez-Sevilla, E. Molina Grima[1] Spain	**OC-30811 Flow Of Pulp Suspensions In A Pipe: Experimental And Numerical Study** M. Rasteiro, C. COTAS, D. ASENDRYCH, F. GARCIA[1] Portugal

	ROOM A5 (Cont.)	ROOM B1 (Cont.)	ROOM B2 (Cont.)
08:30 - 10:00 h	TOPIC 3 Microreactors 3 Chairs: Hasebe, Vlachos	TOPIC 6.6 Microalgae Biotech. 2 Chairs: M. Eppinik, J. Legrand	JE-FIBRE SUSPENSIONS 1 Chairs: Marchioli, de La Fuente
	OC-38796 Continuous Synthesis of Graphene Oxide-supported Silver Nanoparticles in Segmented Flow M. Yang, S. Tao, G. Chen, China PR	**OC-42126 Autotrophic and mixotrophic culture of the microalga Chlorella vulgaris. Effect of culture time on the chemical and elemental composition of biomass** J. Pasos, A. Palomino, L. Montenegro Ruíz, R. Godoy-Silva Colombia	**OC-73676 Refining rheological response of chemical pulp fibre suspensions** Vaz, R. Simões, J. Silvy Portugal
	OC-20706 Bubble splitting under perpendicular liquid squeezing in a T-junction microchannel under gas-liquid-liquid three-phase flow Y. Liu, J. Yue, S. Zhao, C. Yao, G. Chen China PR	**OC-56661 Combined Harvesting and Oil Extraction of Microalgae for Biodiesel Production using a Foam Column** S. Musa, M. Al-Karawi, G. Caldwell, J. Lee United Kingdom	**OC-58726 Turbulence Measurements of Fibre Suspensions using Magnetic Resonance Velocimetry** M. Leskovec, F. Lundell[2] Sweden
	OC-48446 Intensification and mass transfer characteristics of HMF oxidation using a Co/Mn/Br catalyst under mild conditions in a continuous flow micro-reactor A. Hommes, H. Heeres, J. Yue Netherlands	**OC-46701 Drainage enhancement in the continuous foam flotation column used for algae biomass recovery** M. Al-karawi, O. Gordon, S. Musa, G. Caldwell, J. Lee United Kingdom	

	ROOM B4	ROOM C2	ROOM C3
08:30 - 10:00 h	JE-ESCAPE27 T6.- Concepts, Methods and Tools Chairs: Prof. Yasunori Kikuchi and Prof. Davide Manca	JE-ESCAPE27 T1.- Modeling and Simulation Chairs: Prof. Oscar Andrés Prado-Rubio and Prof. Christian Jallut	JE-ESCAPE27 T4.- Process Monitoring and Control Chairs: Dr. Radoslav Paulen and Dr. Maria Soledad Diaz
	08:30 Source Code Generation for Parallelized Simulations of Large-Scale Nonlinear Equation Systems on a Supercomputer using MOSAIC, PETSc, and ADOL-C 2083 **Henning Bonart, Sandra Fillinger, Erik Esche, Günter Wozny and Jens-Uwe Repke**	08:30 Investigation of Hydrodynamic Behaviour in random packing using CFD simulation 13 **Jia-Lin Kang, Wei-Fu Chen, Ya-Cih Ciou, David Shan-Hill Wong and Shi-Shang Jang**	08:30 Expectation constrained stochastic nonlinear model predictive control of a batch bioreactor 1621 **Eric Bradford and Lars Imsland**

	ROOM B4 (Cont.)	ROOM C2 (Cont.)	ROOM C3 (Cont.)
08:30 - 10:00 h	JE-ESCAPE27 T6.- Concepts, Methods and Tools Chairs: Prof. Yasunori Kikuchi and Prof. Davide Manca	JE-ESCAPE27 T1.- Modeling and Simulation Chairs: Prof. Oscar Andrés Prado-Rubio and Prof. Christian Jallut	JE-ESCAPE27 T4.- Process Monitoring and Control Chairs: Dr. Radoslav Paulen and Dr. Maria Soledad Diaz
	08:50 Dynamic Optimization of Constrained Semi-Batch Processes Using Pontryagin's Minimum Principle and Parsimonious Parameterization 2041 **Erdal Aydin, Dominique Bonvin and Kai Sundmacher**	08:50 CFD Analysis of Liquid-Liquid Extraction Pulsed Sieve-Plate Extraction Columns 19 **Zinedine Khatir, Bruce C. Hanson, Michael Fairweather and Peter J. Heggs**	08:50 Modeling and nonlinear MPC of a dividing-wall column for separation of Benzene-Toluene-p-Xylene: a simulation case study 1615 **João R. Leal, Andrey Romanenko and Lino O. Santos**
	09:10 Process Analysis on Multiple Solutions of Semi-algebraic Systems 2059 **Fei Zhao, Xi Chen and Lingyu Zhu**	09:10 CFD simulation of sieve tray hydraulics using the lattice Boltzmann method 37 **Noelia Llorente-Remartínez and Santos Galán**	09:10 Wastewater treatment plants operation optimization using economic dynamic real time optimization strategies 1567 **Silvana Revollar, Pastora Vega, Ramon Vilanova and Mario Francisco**
	09:30 When Robust Statistics Meets with Robust Optimization: Data-Driven Batch Process Scheduling in the Presence of Outliers 2263 **Chao Ning and Fengqi You**	09:30 Numerical Simulation of Two-phase Flow in Representative Elements of Structured Packings 2089 **Alexander Olenberg and Eugeny Y. Kenig**	09:30 Economic Model Predictive Control of Aeration Systems in a Full Scale Biological Wastewater Treatment Plant 1579 **Fatiha Nejjari, Vicenç Puig, Joseba Quevedo, Josep Pascual and S. de Campos**

	ROOM C4	ROOM C5	ROOM C6
08:30 - 10:00 h	JE-ESCAPE27 T5.- Integrated/ Holistic Approaches Chairs: Prof. David Bogle and Prof. José A. Caballero	JE-ESCAPE27 T2.- Synthesis and Design Chairs: Prof. Costas Kiparissides and Prof. Luis Cisternas	JE-IPIC-Scaleup & Industrial Implementation of Intensified Technologies 1 Chairs: J.Harmsen, G. Luo
	08:30 An MILP model for the simultaneous design of mass and heat networks of a collaborative eco-industrial park 1939 **Sami Ghazouani, Assaad Zoughaib and Solène Le Bourdiec**	08:30 A Dual Methodology for Synthesis of Woody Biomass to Liquid (BtL) Thermochemical Conversion Routes and Bio-oil Upgrading 679 **Paola Ibarra-Gonzalez, Carlo Edgar Torres-Ortega and Ben-Guang Rong**	**KN-73211** **High-efficiency packing development for rotating packed beds** Y. Luo, G. Chu, J. Chen China PR

	ROOM C4 (Cont.)	ROOM C5 (Cont.)	ROOM C6 (Cont.)
08:30 - 10:00 h	JE-ESCAPE27 T5.- Integrated/ Holistic Approaches Chairs: Prof. David Bogle and Prof. José A. Caballero	JE-ESCAPE27 T2.- Synthesis and Design Chairs: Prof. Costas Kiparissides and Prof. Luis Cisternas	JE-IPIC-Scaleup & Industrial Implementation of Intensified Technologies 1 Chairs: J.Harmsen, G. Luo
	08:50 Benefits analysis of optimal design of eco-industrial parks through life cycle indicators 1951 **Marianne Boix, Ludovic Montastruc, Manuel Ramos, Olivier Gentilhomme and Serge Domenech**	08:50 Bio-conversion targeting using a model-based systems approach 685 **Georgios P. Panayiotou and Antonis Kokossis**	**OC-93391 Bridging the Gap between Laboratory and Commercial Scale Microwave Polymer Synthesis** B. Adam, C. Dodds, D. Irvine, D. Beneroso Vallejo, A. Sklavounou United Kingdom
	09:10 A Hybrid Methodology for Combined Interplant Heat, Water, and Power Integration 1969 **Maziar Kermani, Anna S. Wallerand, Ivan D. Kantor and François Maréchal**	09:10 Simultaneous Optimization of Cooler Network, Pump Network, and Cooling Tower 763 **Jiaze Ma, Yufei Wang and Xiao Feng**	**OC-25926 Mechanical Intensification of Lignocellulosic Biomass Saccharification: Fluid Dynamics and Scale-up** M. Wojtusik, E. Gómez, J. Villar, M. Ladero, F. García-Ochoa Spain
	09:30 Optimal Global Land Use, Cultivation, Transportation, and Production Strategies to Minimise Life Cycle Greenhouse Gas Emissions of Ethanol 2005 **Daniel J. Garcia and Fengqi You**	09:30 Locating Heat Exchangers in an EIP-wide Heat Integration Network 793 **Sajitha K. Nair, Melvin Soon and Iftekhar A. Karimi**	**OC-21931 Developing a scale-up correlation for oscillatory baffled reactors** S. Ahmed, A. Phan, A. Harvey, United Kingdom
			SOC-79331 Process intensification in biorefinery J. Labidi, X. Erdocia, J. Fernandez-Rodríguez, M. González Alriols, P. Gullón Spain
			SOC-53231 Implementation of process analytical tools for design of control limits by predictive control in the roll compaction of active pharmaceutical ingredients P. Cronin, B. Castro-Dominguez, G. Walker, B. Schaller, K. Moroney, A. Albadarin Ireland

	ROOM C7	ROOM C8	ROOM D1
08:30 - 10:00 h	TOPIC 7.7-Capture, Storage & Use of CO2 4 Chairs: Salmi, Rubiera	TOPIC 7.4 & 7.5 Soil Remediation & Wastes 4 Chairs: Diaz, Arandes	JE-CFD Use of CFD to Improve Chemical Processes 7 Chairs: Kresta, Derksen
	OC-42306 Development of an Energy-saving Carbon Dioxide Capture Process Using Circulating Fluidized Bed Y. Kansha, M. Ishizuka, A. Tsutsumi Japan	**OC-49786 Conversion of Rice-Husk Waste to value added products by Thermal Treatment** S. GUHE India	**KN-29871 A Eulerian-Lagrangian Hybrid model for the simulation of the drop size distribution of liquid-liquid emulsions in stirred tank reactors** R. Farzad, S. Schneiderbauer[2] Austria
	OC-33656 Separation of co2 in a solid waste management incineration facility by means of pine sawdust derived activated carbons I. Durán Vera, F. Rubiera González, C. Pevida García, Spain	**OC-47421 Solubilised biopolymers from sludge by hydrothermal treatments. Effects of an oxidising atmosphere** J. Urrea, M. García, S. Collado, P. Oulego, M. Díaz Spain	**OC-21511 Computational Fluid Dynamics (CFD) Simulation of liquid-liquid dispersions in continuous mixer of mixer-settler** Y. wang, Q. Tang, S. ye China PR
	OC-31431 Solid state electrochemical device for carbon dioxide capture and reduction S. Naficy, T. Benedetti, F. Dehghani[1] 	**OC-38121 Ammonia removal by struvite precipitation for horse manure waste gasification: Experimental study and economic analysis** C. Wang, Y. Shen, W. Xiao, M. Tan, C. Chong[3] Singapore	**OC-70686 Scale down of industrial bioreactors based on Euler-Lagrange CFD simulations** C. Haringa, R. Mudde, H. Noorman, W. Tang, G. Wang[3] Netherlands
	OC-31071 Modeling a monolithic carbon fixed-bed TSA for post-combustion CO2 capture M. G. Plaza, F. Rubiera, C. Pevida Spain	**OC-37486 Biomass Conversion into Low Oxygenated Hydrocarbons by Hydrothermal Liquefaction** C. Martínez, R. Posmanik, D. Cantero, B. Cantero-Tubilla, M. Cocero, J. Tester Spain	**OC-92451 Determination of nusselt number correlation for jacketed stirred tank using computational fluid dynamics** S. Araujo Daza, J. Nunhez, R. Jaimes Prada, G. Castilho Brazil
	OC-30926 Carbon dioxide valorization through reductive calcination of mineral carbonates M. Siebenhofer, G. Baldauf-Sommerbauer, S. Lux Austria	**OC-37276 Optimization of the procedures for extracting lipid biodiesel precursors from secondary wastewater treatment sludge** S. Ordonez, Y. Patiño, L. Faba, E. Diaz Spain	**SOC-34696 CFD-PBM simulations of liquid-liquid dispersion in stirred tanks** D. Li, D. Marchisio, D. Lucas, M. Pollack, S. Salenbauch, H. Christian[3] Germany

	ROOM C7 (Cont.)	ROOM C8 (Cont.)	ROOM D1 (Cont.)
08:30 - 10:00 h	TOPIC 7.7-Capture, Storage & Use of CO2 4 Chairs: Salmi, Rubiera	TOPIC 7.4 & 7.5 Soil Remediation & Wastes 4 Chairs: Diaz, Arandes	JE-CFD Use of CFD to Improve Chemical Processes 7 Chairs: Kresta, Derksen
			SOC: 85221 Temperature influence on droplet generation in microfluidic devices: Lattice Boltzmann simulation and experimental validation N. Ibaseta, Aurelio Hurtado, Maksym Slobodeniuk, Umberto D'Ortona, Nelson Ibaseta, Pierrette Guichardon
			SOC-87321 Mathematical two-phase flow modelling and numerical simulation of the rotating mixing in a chemical reactor D. Karadimou, P. Papadopoulos, N. Markatos Greece

	ROOM D2	ROOM D3	ROOM D4
08:30 - 10:00 h	JE-ESCAPE27 T7.- CAPE Applications Addressing Global Grand Challenges Chairs: Dr. Cristhian Almeida-Rivera and Dr. Giorgos Kopanos	TOPIC 5.5-Process Driven Product Design of Food Products Chairs: Windhab, Kohlus	TOPIC 2 Separation 3 Chairs: Toikka, Brunazzi
	08:30 A Green Desuperheater for an Energetic Efficient Alternative to the Decompression Valve in Supercritical Water Hydrolysis Process. CFD Simulation. 2905 **Luis Vaquerizo and María José Cocero**	**OC-58376 Milk proteins conjugated to polysaccharides to stabilise edible double emulsions produced by emulsification with SPG membranes** M. Estevez, R. Berendsen, C. Güell, S. de Lamo-Castellví, M. Ferrando Spain	**OC-59796 Surface behavior of frothers in saline water through molecular simulation** J. Saavedra, G. Quezada, P. Toledo Chile

	ROOM D2 (Cont.)	ROOM D3 (Cont.)	ROOM D4 (Cont.)
08:30 - 10:00 h	JE-ESCAPE27 T7.- CAPE Applications Addressing Global Grand Challenges Chairs: Dr. Cristhian Almeida-Rivera and Dr. Giorgos Kopanos	TOPIC 5.5-Process Driven Product Design of Food Products Chairs: Windhab, Kohlus	TOPIC 2 Separation 3 Chairs: Toikka, Brunazzi
	08:50 Model-based optimization of the recombinant protein production in Pichia pastoris based on dynamic flux balance analysis and elementary process functions 2815 **Victor N. Emenike, Moritz Schulze, René Schenkendorf and Ulrike Krewer**	**OC-47456 Encapsulation of Lactobacillus delbrueckii subsp. bulgaricus with quitosan and a poly(acrylic acid)-pluronic-poly(acrylic acid) copolymer by the Layer-by-Layer technique for protection through gastrointestinal conditions** M. Simões, G. Quintana, A. Hugo, P. Alves, P. Ferreira, E. Gerbino, P. Simões, A. Gomez-Zavaglia[2] Portugal	**OC-68731 Computational investigation of segment region in a solid-liquid stirred tank** W. Xu, X. Feng, Y. Yong, S. Wang, C. Yang[1] China PR
	09:10 Separation and recovery of intracellular beta-carotene using a process synthesis framework 2851 **Alexander M. Sabol, Maria-Ona Bertran, Jonathan P. Raftery, John M. Woodley, Rafiqul Gani and M. Nazmul Karim**	**OC-77446 Encapsulation of resveratrol in high internal phase water-in-oil-in-water double emulsions** M. Matos Gonzalez, G. Gutierrez, R. Díaz, L. Martínez, A. Cambiella, O. Iglesias, C. Pazos[2] Spain	**OC-79581 Packed Bed Performance Analytics Based on Gamma Scans** L. Pless, United States of America
	09:30 Improving the Prediction of Phosphate Dynamics in Biotechnological Processes: A Case Study Based on Antibiotic Production Using Streptomyces coelicolor 2869 **Patrick Bürger, Xavier Flores-Alsina, Harvey Arellano-Garcia and Krist V. Gernaey**	**OC-88931 Preliminary study of microencapsulation of β-Carotene by complex coacervation technique. Characterization and delivery rate of microcapsules during in vitro digestion** C. Ramirez, A. Bonilla, V. del Campo, P. Haberle, H. Nuñez, S. Almonacid, R. Simpson[2] Chile	**OC-81836 High Pressure Dewatering Rolls - Applying Shear and Compression Simultaneously to Enhance Dewatering** E. Höfgen, A. Stickland, P. Scales, R. Batterham[1] Australia
		OC-26016 Formation of surface composition on spray-dried milk powder C. Selomulya, M. Foerster, T. Gengenbach, M. Woo[1] Australia	**OC-84436 Rare earth and transition metal ions separation from acid mine drainage using chelating ion exchange resins** M. Hermassi, C. Valderrama, M. Granados, E. Torres, C. Ayora, J. Cortina[4] Spain

	ROOM D2 (Cont.)	ROOM D3 (Cont.)	ROOM D4 (Cont.)
08:30 - 10:00 h	JE-ESCAPE27 T7.- CAPE Applications Addressing Global Grand Challenges Chairs: Dr. Cristhian Almeida-Rivera and Dr. Giorgos Kopanos	TOPIC 5.5-Process Driven Product Design of Food Products Chairs: Windhab, Kohlus	TOPIC 2 Separation 3 Chairs: Toikka, Brunazzi
		OC-51721 Effervescent Atomization for Spray Drying of Rheological Complex Food Liquids S. Foschini, E. Windhab Switzerland	**OC-87826 An Investigation on the Drop/interface Coalescence with Surfactants** T. Dong, W. Weheliye, P. Angeli United Kingdom

	ROOM D5	ROOM D6	ROOM D7
08:30 - 10:00 h	JE-PARMAT Agglomeration Chairs: Kwade, Ramírez Gomez	TOPIC 7.3 Water Management & Treatments 7 Chairs: Frascasi, Moldes	JE-Electrochemical-Round Table Photoelectrochemical & Soil Chair: De Andrade SOC- 7.5 min
	KN-96811 **DEM Models of Acoustic Agglomeration of Micro Particles in a View of CFD Simulations** R. Kačianauskas, A. Maknickas, V. Rimša Lithuania	**OC-36436 Degradation of a residual herbicide in water by electrochemical advanced oxidation process in a microreactor** W. Khongthon, G. Jovanovic, A. Yokochi, P. Sangvanich, S. Silambarasan, A. Vangnai[1], V. Pavarajarn[1] Thailand	**SOC-34206** **Evaluating the effect of anodization mode on the photocatalytic activity of TIO2 nanotube array electrodes** E. Mena, M. Martín de Vidales, S. Mesones, J. Marugán[1] Spain
	OC-28651 Perikinetic and orthokinetic aggregation of small solid particles in the presence of strong repulsive forces J. Bałdyga[1], G. Tyl, M. Bouaifi[2] Poland	**OC-31341 Innovative hybrid process coupling biodegradation and solar photo-oxidation for the removal of pharmaceutical residues from wastewater of retirement homes** A. Rodriguez Castillo, C. Dezani, V. Goetz, C. Calas-Blanchard, S. Lacorte, C. Joannis-Cassan, G. Plantard[2] France	**SOC-62041** **Solar-Powered Hydrogen Production in Photo-Electrochemical Reactors** G. Kelsall, F. Bedoya Lora, A. Hankin United Kingdom

	ROOM D5 (Cont.)	ROOM D6 (Cont.)	ROOM D7 (Cont.)
08:30 - 10:00 h	JE-PARMAT Agglomeration Chairs: Kwade, Ramírez Gomez	TOPIC 7.3 Water Management & Treatments 7 Chairs: Frascasi, Moldes	JE-Electrochemical-Round Table Photoelectrochemical & Soil Chair: De Andrade SOC- 7.5 min
	OC-53626 Impact of contact liquid dispersion on agglomeration in fluidized beds C. Rieck, A. Bück, E. Tsotsas Germany	**OC-24851 Pharmaceutical removal from water by polymerized tannins** J. Beltran de Heredia, E. Beltrán de Heredia[2] Spain	**SOC-35591 Electrolysis of the ionic liquid Bmim-NTf2 using diamond anodes. Is NTf2 a refractory compound for this technology?** I. Mena[1], S. Cotillas, E. Díaz, null Mohedano, C. Sáez, M. Rodrigo[3] Spain
	OC-88271 Dispersion of agglomerated particles in flow fields and mechanical characterization by direct tensile and compressive tests T. Wollborn, C. Knoop, U. Fritsching[2] Germany	**OC-24466 Removal of organochlorinated species from water by combined biological and electrochemical processes** M. Carboneras Contreras, S. Barba Piedrabuena, F. Fernández Morales, J. Villaseñor Camacho, M. Rodrigo Rodrigo, P. Cañizares Cañizares Spain	**SOC-29511 Irradiated-assisted electrochemical processes for the removal of clopyralid from soil washing wastes** M. MARTIN DE VIDALES, M. CASTRO, C. SAEZ, P. CAÑIZARES, M. RODRIGO[2] Spain
	SOC-90601 Use of acoustic backscatter systems to characterise suspension dynamics and separation in situ T. Hunter, J. Bux, H. Rice, J. Peakall, S. Biggs[4] United Kingdom	**OC-80151 Evaluation of transformation products of the biological and chemical oxidation of micropollutants in wastewater** J. Rodríguez-Chueca, C. García-Cañibano, A. Cruz del Álamo, R. Molina, F. Martínez, null Encinas, R. Koivula, J. Pellinen, C. Medana, D. Fabbri, P. Calza, J. Marugán Spain	**SOC-86351 Visible light assisted oxidation of organic compounds at WO3-TiO2 nanotubes** M. Mascia, L. Mais, S. Palmas, A. Vacca, S. Corgiolu, E. Sechi Italy
	SOC-57771 Study of fish-hook effect in micro-hydrocyclones under different feed conditions: pressure, concentration and material J. Izquierdo, J. Vicente, R. Aguado, M. Olazar[1] Spain		**SOC-54701 Co-based air-diffusion electrodes for water decontamination by H2O2-based processes** G. Álvarez, F. Alcaide, E. Brillas[2], I. Sirés[2] Spain

	ROOM D5 (Cont.)	ROOM D6 (Cont.)	ROOM D7 (Cont.)
08:30 - 10:00 h	JE-PARMATAgglomeration Chairs: Kwade, Ramírez Gomez	TOPIC 7.3 Water Management & Treatments 7 Chairs: Frascasi, Moldes	JE-Electrochemical-Round Table Photoelectrochemical & Soil Chair: De Andrade SOC- 7.5 min
	SOC-50631 Particle agglomeration observations during primary (spray drying) and secondary drying of pharmaceuticals M. Davis, C. Potter, G. Walker Ireland		**SOC-41001 Electrocoagulation for the Treatment of Oil-Sands Produced Water** E. Roberts, N. Yasri, T. Shu, B. Fuladpanjeh Hojeghan Canada
			SOC-64426 The use of integrated process electrokinetic soil flushing to removal petroleum and metals E. VIEIRA DOS SANTOS, J. Barros Belko, S. Silva Mendonça de Paiva, D. Araújo de Medeiros, D. Ribeiro da Silva, D. Nascimento Silva[2] Brazil
			SOC-93556 Scale-up of the Electrokinetic Remediation the removal of 2,4-D herbicide R. López-Vizcaíno, C. Risco, J. Isidro, S. Rodrigo, C. Sáez, P. Cañizares, V. Navarro, M. Rodrigo, Spain
			SOC-28346 New alternatives for imidazolium-based ionic liquids degradation by advanced oxidation processes in aqueous and soil matrixes A. Diez, E. Rosales, M. Sanromán, M. Pazos Spain

	MAIN AUDITORIUM
10:00 - 11:00 h	PLENARY SESSION **"Process Research in the Chemical Industry"** Peter Schuhmacher President, Process Research & Chemical Engineering, BASF, Germany.
11:00 – 11:30h	Coffee Break & Poster session

	ROOM A3	ROOM A4	ROOM A5
11:30 - 13:00 h	TOPIC 6.4 M3C 4 Chairs: B. Hitzmann, J. Glassey	TOPIC 3 High Pressure – Technology & Processes 2 Chairs: Caputo, Kida	TOPIC 3 Microreactors 2 Chairs: Prat, Mae
	OC-68156 An Agent-based modeling approach for modeling the effect of electric field tumor chemotherapeutics M. Moarefian, L. Achenie United States of America	**OC-44256 Process and equipment design of supercritical drying** N. Menshutina, A. Lebedev, I. Khudeev Russia	**OC-62121 Induction heating fluidized bed reactor for high temperature gas-solid reactions** M. Latifi, J. Chaouki Canada
	OC-78251 Model-based analysis and optimisation of hydrogen production with a synthetic microbial community S. Di, A. Yang United Kingdom	**OC-21036 Effect of reaction time in the hydrolysis process of lignin via supercritical water using ultrafast reactors** N. Abad Fernandez, E. Perez Velilla, M. Cocero Alonso[1] Spain	**OC-63741 Synthesis of narrow sized metal nanoparticles in helical microreactors** K. Wu, L. Torrente Murciano United Kingdom
	OC-57386 A novel method for the parameter identification of large-scale hybrid semi-parametric models P. Rasiukas, M. von Stosch, M. Willis United Kingdom	**OC-24541 In situ analysis of ammonothermal media by UV/Vis- and Raman-spectroscopy** A. Kimmel, E. Schluecker Germany	**OC-63461 Study of local concentrations and catalyst distribution during direct synthesis of H2O2 in a novel suspension-flow micro channel membrane reactor** R. Dittmeyer, B. Deschner, S. Urban, A. Weltin, G. Urban, D. Kauzlaric, A. Greiner, M. Kraut[4] Germany
	OC-41516 Modelling biotechnological process using Individual-based models and MbT-Tool, a new perspective to study Microbial Metabolic Reactions based on Thermodynamics P. Araujo Granda, A. de la Rosa Martinez, K. Campoverde, A. Gras Moreu, M. Ginovart Gisbert[2] Ecuador	**OC-88396 Multifunctional flow platform advances for enhanced catalytic biobutanol production** A. Baker, V. Sans Sangorrin United Kingdom	**OC-54821 Power to gas: Heat management of the methanation of carbon dioxide in microchannel plate heat-exchangers of 5-50 kW power equivalent** G. Kolb, S. Neuberg, H. Pennemann, D. Tiemann, M. Wichert Germany
	OC-71016 Optimal design of feed strategies of fed-batch bioprocesses for optimal model parameter estimation O. Paquet-Durand, S. Assawajaruwan, B. Hitzmann Germany	**OC-66231 SIMULATION OF EVA-COPOLYMERS FROM TECHNICAL AUTOCLAVE REACTORS WITH REGARD TO SAMPLE CHARACTERIZATION** S. Griebenow, M. Busch, E. Schulz Technische Universität Darmstadt, Germany	**OC-49356 Blockage Diagnosis and Stable Operation for A Numbering-up System of Microreactors** O. Tonomura, S. Taniguchi, S. Hasebe, Japan

	ROOM A3 (Cont.)	ROOM A4 (Cont.)	ROOM A5 (Cont.)
11:30 - 13:00 h	TOPIC 6.4 M3C 4 Chairs: B. Hitzmann, J. Glassey	TOPIC 3 High Pressure – Technology & Processes 2 Chairs: Caputo, Kida	TOPIC 3 Microreactors 2 Chairs: Prat, Mae
	OC-28126 By-product Inhibition Kinetics of the Acetone-Butanol Fermentation and Modeling of in-situ Separation on Aspen Plus® M. Naidoo, S. Tai, M. Johnstone-Robertson, S. Harrison South Africa	**OC-38371 Towards the development of a multi-phase process modelling framework** A. Khazali, K. Möller South Africa	**OC-73646 Superparamagnetic aqueous droplets with a particle shell for lab-in-a-drop processes** N. Tippkötter, Germany

	ROOM B1	ROOM B2	ROOM C2
11:30 - 13:00 h	TOPIC 6.6 Microalgae Biotech 3 Chairs: M.Eppink, J. Legrand	JE-FIBRE SUSPENSIONS 2 Chairs: Lundell, Koponen	JE-ESCAPE27 T1.- Modeling and Simulation Chairs: Prof. Natalia Menshutina & Dr. Jordi Bonet
	OC-28226 Effect of dissolved oxygen concentration on photobioreactor performances for microalgae culture A. kazbar, J. Pruvost, H. Takache, A. Ismail[3] France	**KN- 99966 (20 min) Compression rheology during dewatering of fibrous suspensions** J. Hao[1], B. Ramarao, S. Ramaswamy[2] United States of America	11:30 Effect of Physical Properties on Accuracy Enhancement of Free Radical Polymerization Model in Tubular Reactors 139 **Arthit Vongachariya, Choosak Kiwjaroen, Kusuma Kulajanpeng, Siricharn Jirapongphan, Nattawat Tiensai and Wiwut Tanthapanichakoon**
	OC-56436 Effect of high/ low light intensities and dilution rate on extracellular hydrocarbon and cell density of the microalga Botryococcus braunii BOT 22 B. Sadeghin, D.Grizea, J.Legrand, M. Watanabe, C. Dupre, J. Jin, MH. Sarrafzadeh, Sadeghin	**OC-86506 Length-Selective Separation of Cellulose Fibres by Hydrodynamic Fractionation: Influence of the Fibre Network on Separation** J. Redlinger-Pohn, J. König, S. Radl Austria	11:50 Modelling the physical properties of ionic liquid/ metal salt mixtures with the soft-SAFT equation of state: application to carbon monoxide reactive separation 217 **Gabriel Zarca, Inmaculada Ortiz, Ane Urtiaga and Fèlix Llovell**
	OC-59341 Mild Liquefaction of Dunaliella remnant to 5-HMF and levulinic acid under biphasic reaction conditions L. Rihko-Struckmann, O. Oluyinka, M. Fachet, K. McBride, K. Sundmacher[4] Germany	**OC-65836 On the relative motion between rigid fibers and fluid in turbulent channel flow** C. Marchioli, L. Zhao, H. Andersson[3] Italy	12:10 PU foams: Modelling of heat insulation properties and their degradation in time 475 **Pavel Ferkl, Andra Nistor, Martina Podivinska, Michal Vonka and Juraj Kosek**

	ROOM B1 (Cont.)	ROOM B2 (Cont.)	ROOM C2 (Cont.)
11:30 - 13:00 h	TOPIC 6.6 Microalgae Biotech.3 Chairs: M.Eppink, J. Legrand	JE-FIBRE SUSPENSIONS 2 Chairs: Lundell, Koponen	JE-ESCAPE27 T1.- Modeling and Simulation Chairs: Prof. Natalia Menshutina and Dr. Jordi Bonet
	OC-24386 Pilot-scale production of high-value nutraceutical compounds using microalgae D. McClure, A. Luiz, J. Kavanagh, G. Barton Australia	**OC-35196 On the effect of non-Newtonian fluids properties on the residence time distribution in an OBR** A. Twerda, M. Mohana, L. Geers, V. van Pul[1], Netherlands	12:30 Robust Flash Calculations through Nonsmooth Inside-Out Algorithms 235 **Harry A. J. Watson, Matias Vikse, Truls Gundersen and Paul I. Barton**
	OC-23736 Recovery of proteins from microalgae using Ionic liquid-based liquid dual-phase partitioning (IL-LDPP) T. Ling, W. Phong, P. Show[2] Malaysia	**OC-81576 Superhydrophobicity and Drag Reduction of Water and Wood Pulp Fibre Suspensions in External and Internal Flows** M. Walmsley, M. ALQattan, New Zealand	12:50 Data Validation and Modelling of Thermodynamic Properties of Systems with Active Pharmaceutical Ingredients (APIs) in Complex Media for Skin Absorption Process 247 **Lukasz Ruszczynski, Alexandr Zubov, Gürkan Sin and Jens Abildskov**
	OC-53666 Optimization of microalgae culture in building integrated photobioreactors E. TODISCO, F. Le Borgne, S. Durecu, J. Pruvost[1] France	**SOC-24791 Fibre suspension properties in turbulent flow** K. SUN China PR	
		SOC-55376 Experimental Investigation of the Flow Dynamics and Rheology of Complex Fluids in Pipe Flow Using Hybrid Velocity Profiling A. Koponen, S. Haavisto, R. Lehto, M. Cardona, J. Salmela, R. Powell, M. McCarthy, M. Kataja[3] Finland	
		SOC-65606 Effect of pipe diameter on drag reduction by degradable polymers C. Marchioli, M. Simeoni, M. Campolo, A. Soldati[2] Italy	

	ROOM B1 (Cont.)	ROOM B2 (Cont.)	ROOM C2 (Cont.)
11:30 - 13:00 h	TOPIC 6.6 Microalgae Biotech.3 Chairs: M.Eppink, J. Legrand	JE-FIBRE SUSPENSIONS 2 Chairs: Lundell, Koponen	JE-ESCAPE27 T1.- Modeling and Simulation Chairs: Prof. Natalia Menshutina and Dr. Jordi Bonet
		SOC-70921 Fully resolved simulation of ellipsoidal particles in channel flows with an immersed boundary method K. Zhou, G. Akiki, S. Balachandar[2] China PR	
		SOC-22566 MONITORING FLOW AND FLOCCULATION OF COMPLEX SUSPENSIONS E. Fuente, M. Rasteiro, null Blanco, C. Negro[1] Spain	
		SOC-35421 Numerical study of caustics formation impact on clustering of long flexible fibers in two-dimensional flow fields for different Stokes numbers M. Martinez, A. Vernet, J. Pallares Spain	

	ROOM C3	ROOM C4	ROOM C5
11:30 - 13:00 h	JE-ESCAPE27 T3. Planning and Scheduling Chairs: Dr. Gonzalo Guillen Gosalbez and Dr. Ana Carvalho	JE-ESCAPE27 T5. Integrated/ Holistic approaches Chairs: Prof. Francisco Javier Recasens and Dr. Vincent Gerbaud	JE-ESCAPE27 T2. Synthesis and Design Chairs: Prof. Il Moon and Prof. Peter Mizsey
	11:30 A decomposition framework for distribution of fluid products by a vendor-managed-inventory methodology 1387 **Mariana Coccola, Carlos Alberto Méndez and Rodolfo Dondo**	11:30 Systematic decision making models through Conceptual Constraints 1873 **Canan Dombayci and Antonio Espuña**	11:30 Optimal Shale Gas Flowback Water Desalination under Correlated Data Uncertainty 943 **Viviani C. Onishi, Rubén Ruiz-Femenia, Raquel Salcedo-Díaz, Alba Carrero-Parreño, Juan A. Reyes-Labarta and José A. Caballero**
	11:50 Decision Automation for Oil and Gas Well Startup Scheduling Using MILP 1399 **Jeffrey D. Kelly, Brenno C. Menezes and Ignacio E. Grossmann**	11:50 Integrated Design, Planning, and Scheduling of Renewables-based Fuels and Power Production Networks 1879 **Qi Zhang, Mariano Martín and Ignacio E. Grossmann**	11:50 Simulation-optimisation-based Design of Crude Oil Distillation Systems with Preflash Units 823 **Minerva Ledezma-Martínez, Megan Jobson and Robin Smith**

	ROOM C3 (Cont.)	ROOM C4 (Cont.)	ROOM C5 (Cont.)
11:30 - 13:00 h	JE-ESCAPE27 T3. Planning and Scheduling Chairs: Dr. Gonzalo Guillen Gosalbez and Dr. Ana Carvalho	JE-ESCAPE27 T5. Integrated/ Holistic approaches Chairs: Prof. Francisco Javier Recasens and Dr. Vincent Gerbaud	JE-ESCAPE27 T2. Synthesis and Design Chairs: Prof. Il Moon and Prof. Peter Mizsey
	12:10 Optimal scheduling for power-intensive processes under time-sensitive electricity prices 1423 **Natalia P. Basán, Ignacio E. Grossmann, Ajit Gopalakrishnan, Irene Lotero and Carlos Alberto Méndez**	12:10 Shared resource allocation in the process industries via price-based coordination for systems with discrete decisions 1897 **Lukas Samuel Maxeiner, Simon Wenzel and Sebastian Engell**	12:10 Dynamic Modelling and Optimization of Acetylene Hydrogenation Reactor to Improve Overall Economics of Ethylene Plant 847 **Hattachai Aeowjaroenlap, Kritsada Chotiwiriyakun, Nattawat Tiensai, Wiwut Tanthapanichakoon, Stepan Spatenka and Alejandro Cano**
	12:30 Efficient Precedence-Based Multistage Batch Scheduling Formulation with Nontrivial Tightening Constraints 1429 **Pablo A. Marchetti and Jaime Cerdá**	12:30 Incorporating detailed metabolic models into superstructure optimization of biorefineries 2143 **Amir Akbari and Paul I. Barton**	12:30 Inherent Safety Evaluation for Process Flowsheets of Natural/Shale Gas Processes 1243 **Andrea P. Ortiz-Espinoza, Arturo Jiménez-Gutiérrez and Mahmoud M. El-Halwagi**
	12:50 Synthesis of Supply Networks over Multiple Time Frames: A Case Study of Electricity Production from Biogas 1447 **Jafaru Egieya, Lidija Čuček, Adeniyi Isafiade and Zdravko Kravanja**	12:50 Model-based multi-parametric programming strategies towards the integration of design, control and operational optimization 1867 **Nikolaos A. Diangelakis and Efstratios N. Pistikopoulos**	12:50 Smart software system solution for model-based hazard identification of complex industrial processes 1225 **Ján Janošovský, Matej Danko, Juraj Labovský and Ľudovít Jelemenský**

	ROOM C6	ROOM C7	ROOM C8
11:30 - 13:00 h	JE-IPIC-Scaleup & Industrial Implementation of Intensified Technologies 2 Chairs: D.Horbez y D.Marler	TOPIC 7.7-Capture, Storage & Use of CO2 5 Chairs: Naficy, Plaza	TOPIC 7.4 &7.5 Soil Remediation & Wastes 5 Chairs: Dimitrov, Gonzalez-Miquel
	KN-63126 **Rapid Advancement in Process Intensification Deployment (RAPID) – US Efforts to Establish a Modular Chemical Process Intensification Manufacturing Institute** T. Calloway, K. Fletcher, D. Sholl, J. Wispelwey, D. Schuster, K. Visconti[4] United States of America	**OC-28026 Biomass and CO2 valorization: Epoxidation and Carbonation of vegetable oils** X. CAI, J. Zheng, J. Wärnå, T. Salmi, B. Taouk, S. Leveneur[1] France	**KN-20061** **Key role of process/ chemical engineering in up-to-date waste-to-energy approach** P. Stehlik Czech Republic

	ROOM C6 (Cont.)	ROOM C7 (Cont.)	ROOM C8 (Cont.)
11:30 - 13:00 h	JE-IPIC-Scaleup & Industrial Implementation of Intensified Technologies 2 Chairs: D.Horbez y D.Marler	TOPIC 7.7-Capture, Storage & Use of CO2 5 Chairs: Naficy, Plaza	TOPIC 7.4 &7.5 Soil Remediation & Wastes 5 Chairs: Dimitrov, Gonzalez-Miquel
	OC-70236 Study on the internal numbering-up of the luminescent solar concentrator based photomicroreactor F. Zhao, J. Janse, D. Cambié, K. Kuijpers, V. Hessel, M. Debije, T. Noël[1] Netherlands	**OC-27481 Screening new amines for energy efficient absorption of CO2 from synthesis gas** E. Kessler, R. Schneider, M. Irfan, B. Willy, J. Rolker, D. Vasiliu, L. Ninni Schäfer, A. Yazdani, E. von Harbou, H. Hasse[1] Germany	**OC-35341 Study under FCC conditions of the joint catalytic cracking of a phenolic compound in the bio-oil and a hydrocarbon model compound of gasoil** A. Ibarra[1], J. Arandes, J. Azkoiti, J. Bilbao, H. de Lasa[3] Spain
	OC-38686 Balancing the trade-off between reaction rate & throughput in photoreactor design M. Leblebici, G. D. Stefanidis, T. Van Gerven Belgium	**OC-26366 Electrocatalytic transformation of CO2 to CH3OH over Cu-based multimetallic gas diffusion electrodes** J. Albo, J. Solla-Gullón, V. Montiel, A. Irabien[1] Spain	**OC-31106 Deterpenation of Orange Essential Oils using Bio-based Solvents** M. Gonzalez-Miquel, B. Ozturk United Kingdom
	OC-37756 Synergising effects achieved with small scales and acoustic energy F. David, S. Kuhn[2] Netherlands	**OC-25531 Effect of amine density on the CO2 separation properties of functionalized silica materials** S. Builes, P. López-Aranguren, J. Fraile, C. Domingo, L. Vega[3] Colombia	**OC-30466 Industrial symbiosis - brewery's wastes valorization through anaerobic digestion and nanocellulose production** G. Lorenzon, C. Campano, N. Merayo, L. Cortijo, A. Blanco, C. Negro[2] Italy
	SOC-30011 Temperature-controlled interval-contact design for ultrasound-assisted liquid-liquid extraction J. John, S. Kuhn, L. Braeken, T. Van Gerven[1], Belgium	**OC-25416 Capturing CO2 from ambient air using a supported amine based sorbent in a radial flow reactor** Q. Yu, W. Brilman, Netherlands	**OC-24501 Energy valorization of forest residues by torrefaction and subsequent peletization: A pilot scale experience** L. Arteaga, H. Grandon, M. Flores, C. Segura[2] Chile
	SOC-61046 Reliability Center - Remote Condition Monitoring as driver of Operational Excellence H. Ugalde Olascoaga, M. Schley[2] Spain	**OC-45476 Chemical Looping Combustion of coal using ilmenite in 50 kW plant: effect of internals in fuel reactor.** P. Gayan, J. Adanez, A. Abad, J. Bueno Spain	**OC-19966 Flexo-printing paper recycling** M.C.Montes, A. Balea, F. Elena, C. Negro, A. Blanco Spain

	ROOM D1	ROOM D2	ROOM D3
11:30 - 13:00	JE-CFD Use of CFD to Improve Chemical Processes 8 Chairs: Ranade, Baldyga	JE-ESCAPE27 T7.- CAPE Applications Addressing Global Grand Challenges Chairs: Prof. Alberto Bandoni and Prof. Krist Gernaey	TOPIC 5.5-Food Specific Product Design Chairs: Fryer, Kohlus
	KN-62931 **On Turbulent Time Scales and Particle Time Scales When Suspending Solid Particles in Stirred Vessels** J. Giacomelli[1], H. Van den Akker[2] Ireland	11:30 Identifying Gene Regulatory Networks 2749 **Aristotelis Kittas, Lingjian Yang, Lazaros G. Papageorgiou, Gill May, Tariq Enver and David Bogle**	**OC-24161 Texturization of novel plants proteins using rheometer and high moisture extrusion cooking** M. Laporte, E. Stirnemann, E. WIndhab, N. Müller-Fischer, I. Roberts[2] Switzerland
	OC-31201 Multi-particle suspension in laminar flow agitated by a Rushton turbine Z. Li, L. Zhang, Z. Gao, J. Derksen[2] China PR	11:50 A Population Balance Model for Stem Cell Differentiation Bioprocesses 2761 **Romuald Győrgy, Michail E. Klontzas, Margaritis Kostoglou, Nicki Panoskaltsis, Athanasios Mantalaris and Michael C. Georgiadis**	**OC-19801 Numerical examination of the kneading process of bread dough** P. Scepanovic, N. Germann, T. Goudoulas, M. Masoudian Germany
	OC-44936 : Numerical investigation of flow instabilities in T-shaped micro-mixers: benchmark between finite volume and spectral element methods. C. Galletti, L.Siconolfi, E.Brunazzi	12:10 A Model-Based Support for Diagnosing von Willebrand Disease 2779 **Christopher Castaldello, Alessio Gubert, Federico Galvanin, Alessandra Casonato, Roberto Padrini, Massimiliano Barolo and Fabrizio Bezzo**	**OC-52226 Probiotics Supplemented to Bread: Focusing on the Thermal Inactivation during Baking** L. Zhang, R. Boom, M. Schutyser, X. Chen[3] China PR
	OC-69741 Mixing in an agitated tubular reactor J. Derksen United Kingdom	12:30 Risk Evaluation Models for the Design of Parenterals Manufacturing Processes 2791 **Haruku Shirahata, Masahiko Hirao and Hirokazu Sugiyama**	**OC-52881 Investigation of drying and inactivation of Baker's yeast in fluidized beds operated under reduced pressure** S. Zarekar, A. Bück, M. Jacob, E. Tsotsas[1] Germany
	SOC-30301 Numerical simulation of solid distribution and liquid mixing time in dense solid suspensions in a stirred tank F. Maluta, C. Carletti, A. Paglianti, G. Montante[2] Italy	12:50 Dynamic Optimization of Continuous Manufacturing of Pharmaceuticals 2803 **Michael Shoham Patrascu and Paul I. Barton**	**OC-26681 Vibration-induced particle formation in fermented milk products** P. Temme, A. Körzendörfer, S. Nöbel, J. Hinrichs, E. Schlücker, Germany

	ROOM D1 (Cont.)	ROOM D2 (Cont.)	ROOM D3 (Cont.)
11:30 - 13:00 h	JE-CFD Use of CFD to Improve Chemical Processes 8 Chairs: Ranade, Baldyga	JE-ESCAPE27 T7.- CAPE Applications Addressing Global Grand Challenges Chairs: Prof. Alberto Bandoni and Prof. Krist Gernaey	TOPIC 5.5-Food Specific Product Design Chairs: Fryer, Kohlus
	SOC-46506 The Study of Gas Dispersion in Aeration Stirred Tank by using both Experiments and CFD R. Hsu, K. Chung, C. Yang Taiwan		**OC-60046 Conservation of the nutritional properties of tucumã (Astrocaryum aculeatum) pulp using vacuum packaging** S. Duvoisin Junior, S. Caroline Mendes Azevedo, L. Maquiné Vieira, G. Façanha da Silva, P. Melchionna Albuquerque, Brazil

	ROOM D4	ROOM D5	ROOM D6
11:30 - 13:00 h	TOPIC 2 Separation 4 Chair: E.Sorenson	JE-PARMAT Numerical Modelling Chairs: Ramírez-Gómez, Kruggel-Emden	TOPIC 7.3 Water Management & Treatments 8 Chairs: Gaya, Manero
	OC-24771 Twin-Screw Extrusion Isolates High Viscosity Poymers B. Quevedo Sanchez, N. Tople, G. Hemmer[2] Spain	**OC-72471 DEM simulations of screening processes under the influence of moisture** F. Elskamp, H. Kruggel-Emden Germany	**OC-77666 Exploring the Aqueous Phase Reforming as a Wastewater Treatment: Case of Study of Tuna-Cooking Wastewater** J. Baeza Herrera, A. Oliveira, L. Calvo, N. Alonso-Morales, F. Heras, J. Rodriguez, M. Gilarranz[1] Spain
	OC-30256 An efficient numerical approach for transient simulation of multiphase flow behavior in centrifuges: polydisperse particle systems S. Hammerich, H. Nirschl, Germany	**OC-81936 Structural and mechanical characterization of lithium-ion battery electrodes via DEM simulations** C. Sangrós Giménez, C. Schilde, A. Kwade Germany	**OC-21116 ECOLOGICAL STUDY AND RESTORATION PLANNING IN EUTROPHIC LAKES** M. Diaz, J. Di Maggio, A. Siniscalchi, V. Estrada, L. Fritz, F. Grosman, P. Sanzano, J. Guerrero, J. Baglivi, M. Crisafulli, V. Colasurdo, C. Zotelo, M. Polonioli, R. Pettigrosso, M. Hoffmeyer[9] Argentina
	OC-58311 Contribution to the design of magnetic blood cleansing microdevices J. Gómez-Pastora, C. González-Fernandez, A. Basauri, M. Fallanza, E. Bringas, I. Ortiz Spain	**OC-54561 Application of micro computed tomography for adjustment of model parameters for discrete element method** M. Dosta, U. Bröckel, S. Kozhar, S. Heinrich[3] Germany	**OC-19641 Silica removal technologies for high recovery membrane processes** R. Miranda, L. Isabel, B. Angeles Spain

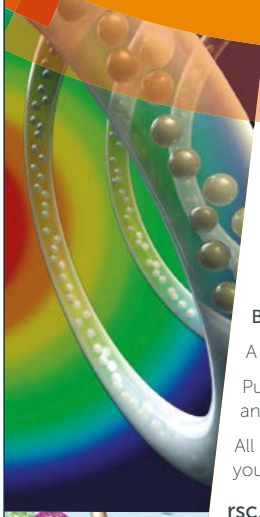
	ROOM D4 (Cont.)	ROOM D5 (Cont.)	ROOM D6 (Cont.)
11:30 - 13:00 h	TOPIC 2 Separation 4 Chair: E.Sorenson	JE-PARMAT Numerical Modelling Chairs: Ramírez-Gómez, Kruggel-Emden	TOPIC 7.3 Water Management & Treatments 8 Chairs: Gaya, Manero
	OC-78946 Removal of fine-grained and thin filter cakes by a counter-current backwash treatment P. Morsch, H. Anlauf, H. Nirschl Germany	**OC-27706 Discharge of spheres, cylinders and their mixtures from cylindrical bin. Experiments and DEM simulations** P. Parafiniuk, J. Wiacek, J. Horabik, M. Bańda, M. Stasiak, M. Molenda, Poland	**OC-86236 Influence of C/N/P ratios on the hydrolases activity in wastewater.** N. Gambier, C. Guigui, C. Joannis Cassan[3] France
	OC-86986 The effect of design parameters on the separation performance of small hydrocyclones – Experimental and CFD studies D. Vega, P. Brito-Parada, J. Cilliers United Kingdom	**OC-81211 Prediction of Self-Heating in Spray Dryer Wall Accumulations** L. Maxfield, A. Bayly, L. Martin de Juan[2] United Kingdom	**OC-80101 Full-scale sulfate radical based-Advanced Oxidation Processes for micropollutants removal** J. Rodríguez-Chueca, E. Laski, C. García-Cañibano, M. Martín de Vidales, null Encinas, B. Kuch, J. Marugán[1] Spain
	OC-87441 Development of a microsieve based micro contactor for gas / liquid phase separation K. Dyrda, K. Haas-Santo, R. Dittmeyer, Germany	**SOC-53286 A Multi-Zonal Modelling of a Counter-Current Spray Drying Tower** M. Ali, T. Mahmud, P. Heggs, M. Ghadiri, United Kingdom	
		SOC-86686 CFD modelling of a counter-current spray drying tower based on swirl decay B. Hernandez Blazquez, L. Martin de Juan, M. Martin[3] United Kingdom	
		SOC-31451 Investigation of the Flow Patterns Produced from Sudden Expansion Geometries using Pressure Difference Measurements and Flow Visualisation Techniques X. Huang, T. Langrish, A. Abbas, D. Fletcher Australia	

	ROOM D7		
11:30 - 13:00 h	JE-Electrochemical- Round Table Fundamental Electrochemistry Chair: Zagal SOC (7.5 min)		
	SOC-90401 Study of the Detection of Heavy Metal Ions by Anodic Stripping Voltammetry Using Microcrystalline and Nanocrystalline Boron-Doped Diamond Electrodes V. Maldonado United States of America		
	SOC-69351 Topological Defects in Nanocarbons for Advanced Oxygen Reduction/Evolution Reactions Q. Zhang, China PR		
	SOC-56256 Enhancement of the washing efficiency of dried starch on metallic surfaces by means of electrocleaning J. Vicaria-Rivillas, O. Herrera-Márquez, C. Fernández-Casilla, E. Jurado Alameda[2] Spain		
	SOC-63051 Triboelectrochemical model for the evaluation of wear dynamics in medical implants A. Dalmau, A. Igual-Muñoz, A. Roda Buch, A. Rovira, S. Cardona[2], J. Navarro-Laboulais[4], Spain		
	SOC-39516 High resolution scanning electrochemical microscopy for the investigation of corrosion mechanisms V. Mena, B. Fernandez, A. Betancor, J. Izquierdo, J. Santana, R. Souto[1] Spain		
	SOC-53951 Development of the electrochemical technology for the production of hydrogen peroxide J. Pérez, C. Sáez, J. Llanos, C. López, P. Cañizares, M. Rodrigo Spain		

	ROOM D7 (Cont.)
11:30 - 13:00 h	JE-Electrochemical- Round Table Fundamental Electrochemistry Chair: Zagal SOC (7.5 min)
	SOC-73246 **Determination of transport properties of phosphate throught an anion exchange membrane by chronopotentiometry** E. Ortega, C. Gally, M. García-Gabaldón, V. Pérez-Herranz, A. Bernardes[2] Spain
	SOC-68351 Designing nanoporous carbon aerogel monolithic electrodes for capacitive deionization C. Macias, G. Rasines, A. Gomis-Berenguer[2], C. ANIA[3] France
	SOC-86411 Electrode Materials in Electrochemical Oxidation Technologies in Water Treatment H. Duong, L. Tran Vietnam
	SOC-19826 **Experimental Characterization of an Electrochemical Preferential Oxidation Reactor** I. Peña Arias, R. Hanke-Rauschenbach, K. Sundmacher[3] Germany
	SOC-67171 **Coating of porous Silicon with organic polymers for photochemical applications** S. Corgiolu, A. Vacca, M. Mascia, S. Palmas, E. Sechi, L. Mais, M. Tiddia, G. Mula, Italy
13:00 - 14:30 h	LUNCH
	MAIN AUDITORIUM
14:30 - 15:30 h	PLENARY SESSION James (Jim) R. Fitterling Chief Operating Officer for the Materials Science Division DowDuPont, USA
15:30 - 17:30 h	CLOSING CEREMONY & AWARDS

Making an impact in engineering

ROYAL SOCIETY OF CHEMISTRY



Reaction Chemistry & Engineering

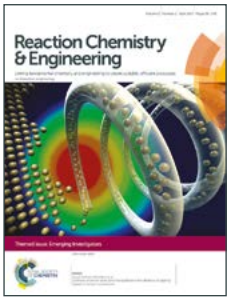
Bridging the gap between chemistry and chemical engineering

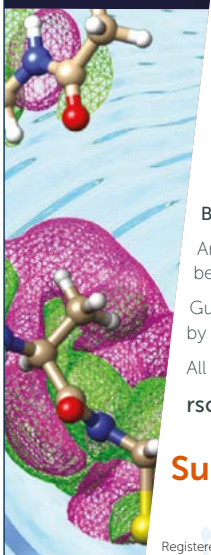
A high impact home for multi-scale understanding of reactions

Publishing research at the interface of chemical engineering and chemistry

All 2016 and 2017 journal content is free to access when you register

rsc.li/reaction-engineering





Molecular Systems Design & Engineering

Building and designing systems from the molecular level

An interdisciplinary first in its field, crossing the boundary between chemistry and chemical engineering

Guided by an editorial board of respected scientists, led by Juan de Pablo

All 2016 and 2017 journal content is free to read upon registration

rsc.li/molecular-engineering

Submit your work online now

THE QUEEN'S AWARDS FOR ENTERPRISE: INTERNATIONAL TRADE 2013

Registered charity number: 207890

Topic 1 - Knowledge, Education & Training

MONDAY-TUESDAY **Groundfloor**

1.1. Curriculum Development & Transformation (from T1.1.001 to T1.1.009)
1.2. e-Learning & e-Assessment (from T1.2.010 to T1.2.013)
1.3. Teaching Engineering Design Safety & Sustainability (from T1.3.014 to T1.3.022)

Topic 2 - Unit Operations & Separation Processes

MONDAY-TUESDAY **Groundfloor**

2.1. Thermodynamics & Transport Phenomena -combined with JE-IUT (from T2.1.001 to T2.1.028)
2.2. Heat & Mass Transfer (from T2.2.029 to T2.2.048)
2.3. Separation Processes (from T2.3.049 to T2.3.136)

Topic 3 - Chemical Reaction Engineering

MONDAY-TUESDAY **Groundfloor**

3.1. Kinetics & Catalysis (from T3.1.001 to T3.1.077)
3.2. Chemical Reactors & Photochemical Reactors (from T3.2.078 to T3.2.111)

WEDNESDAY-THURSDAY **Groundfloor**

3.4. High Pressure Technology & Processes (from T3.4.112 to T3.4.126)
3.5. Multiphase Flow & Reactors -combined with JE-Fibre Suspensions (from T3.5.127 to T3.5.157)
3.6. Micro-reactors (from T3.6.158 to T3.6.179)

Topic 4 - Process System Engineering

WEDNESDAY-THURSDAY

4.1. Computer Aided Process Engineering-(integrated in ESCAPE-27 (from T4.1.001 to T4.1.084)

Topic 5 - Product Engineering & Advanced Materials

MONDAY-TUESDAY **First Floor**

5.1. Product Design -6th Symposium on Product Design and Engineering (from T5.1.001 to T5.1.007)
5.2. New Materials & Nano-Materials (from T5.2.008 to T5.2.072)
5.4. Membrane Science & Technology (from T5.4.106 to T5.4.124)

WEDNESDAY-THURSDAY **Groundfloor**

5.3. Polymers & Composites (from T5.3.073 to T5.3.105)
5.5. Food Science & Technology (from T5.5.125 to T5.5.150)

Topic 6 - Applied Biotechnology (integrated in ECAB4)

MONDAY-TUESDAY **First Floor**

6.1. Bioprocess Engineering (from T6.1.001 to T6.1.132)
6.5. Bio-based Economy: Biorefineries (from T6.5.221 to T6.5.256)

WEDNESDAY-THURSDAY **Groundfloor**

6.2. Health Biotechnology & Engineering (from T6.2.133 to T6.2.160)
6.3. Environmental Biotechnology (from T6.3.161 to T6.3.196)
6.4. Measuring, Modeling, Monitoring & Control (from T6.4.197 to T6.4.220)
6.6. Marine Biotechnology & Engineering (from T6.6.257 to T6.6.264)

Topic 7 - Environmental & Sustainable Chemical Engineering

MONDAY-TUESDAY **First Floor**

7.2. Air Pollution Control (from T7.2.041 to T7.2.062)
7.3. Water Management & Treatments -combined with JE-AOP (from T7.3.063 to T7.3.159)
7.6. Clean Energy Processes & New Energy Vectors (from T7.6.220 to T7.6.265)

WEDNESDAY-THURSDAY **First Floor**

7.1. Resources Use & Sustainable Technologies -partially integrated in ICCOSE 2017 (from T7.1.001 to T7.1.040)
7.4. Waste Reduction & Valorisation (from T7.4.160 to T7.4.213)
7.5. Soil Remediation & Hazardous Wastes (from T7.5.214 to T7.5.219)
7.7. Capture, Storage & Use of CO2 (from T7.7.266 to T7.7.307)

Joint Event - IPIC1/EPIC6/APSPIS3

WEDNESDAY – THURSDAY **First Floor**

- Batch to continuous (from JE-IPIC-001 to JE-IPIC-007)
- Energy activation (from JE-IPIC-008 to JE-IPIC-010)
- Hybrid process and multifunctional process (from JE-IPIC-011 to JE-IPIC-014)
- Modelling and control of intensified processes (from JE-IPIC-015 to JE-IPIC-024)
- Modular process (from JE-IPIC-025 to JE-IPIC-028)
- Process Intensification (integrated in IPIC1/EPIC6/APSPIS3) (from JE-IPIC-029 to JE-IPIC-053)
- Process Intensification for new product development (from JE-IPIC-054 to JE-IPIC-059)
- Scale-up & industrial implementation of intensified technologies (from JE-IPIC-060 to JE-IPIC-064)
- Sustainability and safety (JE-IPIC-065)

Joint Event - Icosse'17

MONDAY-TUESDAY (from 17:30-19:00h) **Groundfloor**

- Bringing sustainability to the mainstream (from JE-ICOSSE-001 to JE-ICOSSE-014)
- Innovative process technology for sustainable products and services (from JE-ICOSSE-015 to JE-ICOSSE-023)
- The transition to sustainable living (from JE-ICOSSE-024 to JE-ICOSSE-026)

Joint Event - PARMAT 2017

WEDNESDAY - THURSDAY **First Floor**

- Mixing (from JE-PARMAT-001 to JE-PARMAT-029)
- Particulate Solids (from JE-PARMAT-030 to JE-PARMAT-062)

Joint Event - Process Safety Symposium

MONDAY-TUESDAY First Floor

- Process safety (from JE-PS-001 to JE-PS-024)
- Education on Process Safety (from JE-PS-025 to JE-PS-026)
- Industrial Process Safety (from JE-PS-027 to JE-PS-035)
- Process Safety Case Studies and Lessons Learned (JE-PS-036)
- Process Safety Leadership (from JE-PS-037 to JE-PS-040)

Joint Event - Energy Storage

WEDNESDAY - THURSDAY First Floor
From JE-ES-001 to JE-ES-043

Joint Event - CFD In Chemical Engineering Symposium

WEDNESDAY - THURSDAY First Floor
From JE-CFD-001 to JE-CFD – 053

Joint Event - AOPs Symposium

WEDNESDAY - THURSDAY First Floor
From JE-AOP-001 to JE-AOP-032

Joint Event - Electrochemical Engineering

WEDNESDAY – THURSDAY First Floor
From JE- EE-001 to JE- EE-029

Joint Event - International Symposium On Ligno-Cellulosic Materials

MONDAY-TUESDAY First Floor

- Advanced Analytical Techniques including Surface analysis (from JE-LIGNOCELL-001 to JE-LIGNOCELL-004)
- Biosynthesis and Deconstruction of lingo-cellulosic biomass (from JE-LIGNOCELL-005 to JE-LIGNOCELL-013)
- Economy and Socioeconomic of lingo-cellulosic materials (from JE-LIGNOCELL-014 to JE-LIGNOCELL-015)
- Integration of multi-feedstock, multi-products, multi-processes and multi energy production in the third generation bio-refinery. New molecules from bio-refineries (from JE-LIGNOCELL-016 to JE-LIGNOCELL-021)
- Ligno-celluloses, Celluloses & Papers as smart materials. Paper & Board advanced materials (from JE-LIGNOCELL-022 to JE-LIGNOCELL-023)
- Nano-technology, Micro- & Nano-celluloses, and their applications. Composites and Nano-composite materials (from JE-LIGNOCELL-024 to JE-LIGNOCELL-026)
- Polymers from renewable resources. Bio-natural Adhesives (from JE-LIGNOCELL-027 to JE-LIGNOCELL-029)
- Recycling of complex lingo-cellulosic materials (from JE-LIGNOCELL-030 to JE-LIGNOCELL-034)
- Thermo-conversion and Bio-energy from biomass (from JE-LIGNOCELL-035 to JE-LIGNOCELL-050)

Joint Event - Symposium On Fibre Suspensions In Process Engineering

WEDNESDAY – THURSDAY **First Floor**
From JE-FIEBRE-001 to JE-FIEBRE-006

Joint Event – Nanocellulose

WEDNESDAY - THURSDAY **First Floor**
From JE-N-001 to JE-N-008

Joint Event - Gas Hydrates

MONDAY-TUESDAY **First Floor**
From JE-GH-001 to JE-GH-002

Joint Event - 4Th Symposium On Industrial Use Of Termodynamics

MONDAY-TUESDAY **First Floor**
From JE-UIT-001 to JE-UIT-011

SCEJ-ECAB Session

MONDAY & TUESDAY **First Floor**
From SCEJ-ECAB 001 to SCEJ-ECAB 005

Escape

MONDAY **Groundfloor**

T1. Modeling and simulation (from P1-01 to P1.22)
T2. Synthesis and Design (from P2.01 to P2.22)
T3. Planning and Scheduling (from P3.01 to P3.19)
T6. Concepts, Methods and Tools (from P6.01 to P6.14)
T7. CAPE applications addressing Global Grand Challenges (from P7.01 to P7.27)

TUESDAY **Groundfloor**

T1. Modeling and simulation (from P1-25 to P1.45)
T2. Synthesis and Design (from P2.23 to P2.42)
T5. Integrated/Holistic approaches (from P5.01 to P5.30)
T6. Concepts, Methods and Tools (from P6.15 to P6.31)
T7. CAPE applications addressing Global Grand Challenges (from P7.28 to P7.44)

WEDNESDAY **Groundfloor**

T1. Modeling and simulation (from P1-50 to P1.65)
T2. Synthesis and Design (from P2.43 to P2.67)
T4. Process monitoring and control (from P4.01 to P4.29)
T7. CAPE applications addressing Global Grand Challenges (from P7.45 to P7.64)

XXIX Interamerican Congress of Chemical Engineering

Incorporating

Canadian Society for Chemical Engineering | *For Our Future*

68th CANADIAN CHEMICAL ENGINEERING CONFERENCE

ENGINEERING FOR A HEALTHY AND SUSTAINABLE PLANET

OCTOBER 28–31
TORONTO, ON 2018

csche2018.ca

10th World Congress of Chemical Engineering

TECHNICAL SECRETARIAT

GRUPOPACIFICO
The power of meeting

Maria Cubi, 4 - Pral. | 08006 Barcelona (SPAIN)
Tel. +34 932.388.777 - Fax. +34 932.387.488
wcce10@wcce10.org

Organized by EFCE-Spain Group:

ANQUE · Enginyers Industrials de Catalunya · SEQUI · AIQS

Sponsors /Supporters

TECNICAS REUNIDAS · CEPSA · REPSOL · TOTAL COMMITTED TO BETTER ENERGY · BASF · DOW

gasN2 · Sabadell · WILEY · WILEY-VCH · feiQuc · SUSCHEM ES · QUIMICA y SOCIEDAD · Diputació Barcelona

EXPOQUIMIA
The International Chemistry Event

▶▶▶▶▶▶▶▶▶ **www wcce10 org**