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WELCOME MESSAGE

On behalf of the International Program Committee (IPC) and the National Organizing Committee (NOC), we would like to extend our warmest welcome to all the attendees of the 7th International Symposium on Advanced Control of Chemical Processes (ADCHEM). Held under the auspices of International Federation of Automatic Control (IFAC), this symposium brings together academics, engineers and researchers around the world in the areas of process modeling, monitoring, and control to the Hong Kong Special Administration Region (HKSAR) of China, the Pearl of the Orient.

There is a saying in Chinese “有朋自遠方來，不亦樂乎!” This can be roughly translated “friends from afar, what a wonderful and happy thing”. Indeed, this ADCHEM will be a wonderful event for the organizers, as we had a record number of paper submission. For you as the symposium attendee, we believe this will also be a wonderful experience for the reasons of:

- **Timing:** This ADCHEM was originally scheduled 17-20 June 2003. The organizers decided to postpone the symposium to 11-14 January 2004, due to the outbreak of the SARS in the spring of 2003. This postponement may have caused some inconvenience to you. For this, we sincerely apologize. Bad things can turn into good. The postponement moves the ADCHEM to a time when the weather of Hong Kong is very comfortable. Also, with this new date, the symposium sits just between the New Year and the Chinese New Year (22 January). Hong Kong is well known for its blending of the western and Chinese cultures. Each year around this time, there will be numerous interesting signs and greetings set up for the Chinese New Year on the walls of the skyscrapers along the magnificent Victoria Harbor area. The organizers would like to take this opportunity to say “Kung Hei Fat Choy and Sun Tai Kin Hong”, wishing you a prosperous, healthy and successful year.
- **Location:** Hong Kong is such a fascinating place. There are so many things in stores for visitors who come from all corners of the world. For those who have visited Hong Kong before, you love to come back and renew their experiences. For those who have not been here before, you will surely have an unforgettable experience. Hong Kong is coined as the shoppers' paradise and heaven of foods. It is also the gateway to Mainland China. Hong Kong has many splendid tourist attractions, and it boasts itself as a metropolis well suited for the 21st century. We are pleased to report that Hong Kong received a record tourist total despite of the SARS outbreak early in year 2003. Hong Kong has again captured the imagination of the visitors. So, come and enjoy Hong Kong.
- **Quality.** Last not the least, with the recorded paper submission and hard work of the entire IPC team, particularly the area chairs, only these high quality papers have been accepted.

Again, warmest welcome. Wish you a wonderful stay in Hong Kong and Happy Chinese New Year.

Furong Gao, Chair, NOC
Frank Allgower, Chair, IPC

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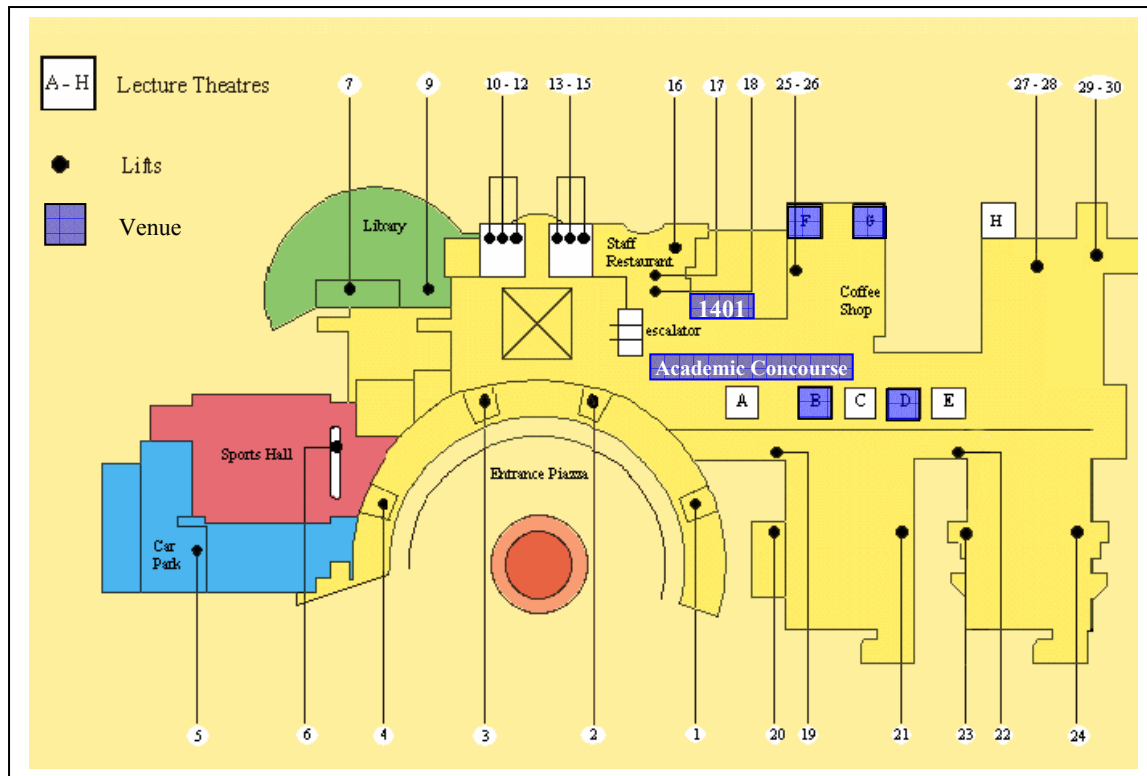
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The organizers greatly appreciate the support from the above agencies, companies and institutions.

PROGRAM AT A GLANCE

Date	SUNDAY	MONDAY	TUESDAY	WENDESDAY						
Time	11 January	12 January	13 January	14 January						
8:00		Registration (Academic Concourse)								
9:00		Opening Ceremony (LTB)	Semi-Plenary Lectures SP #2							
		Plenary Lecture #1 (LTB)	Session SP 2.1 (LTF)	Session SP 2.2 (LTG)	Session SP 3.1 (LTF)	Session SP 3.2 (LTG)				
10:00			Coffee Break	Coffee Break						
		Coffee Break	Oral Lectures #3		Oral Lectures #5					
11:00		Oral Lectures #1	Session 3.1 (LTD)	Session 3.2 (LTF)	Session 3.3 (LTG)	Session 5.1 (LTD)	Session 5.2 (LTF)	Session 5.3 (LTG)		
12:00		Session 1.1 (LTD)	Session 1.2 (LTF)	Session 1.3 (LTG)						
13:00		Lunch	Lunch		Lunch					
14:00		Semi-Plenary Lectures SP #1	Session SP 1.1 (LTF)	Session SP 1.2 (LTG)	Session 4.1 (LTD)	Session 4.2 (LTF)	Session 4.3 (LTG)	Session 6.1 (LTD)	Session 6.2 (LTF)	Session 6.3 (LTG)
15:00	Registration (Academic Concourse)	Coffee Break	Coffee Break		Plenary Lecture #3 (LTB)					
		Oral Lectures #2	Coffee Break							
16:00		Session 2.1 (LTD)	Session 2.2 (LTF)	Session 2.3 (LTG)	Plenary Lecture #2 (LTB)		Closing Ceremony (LTB)			
17:00	Departure to Harbour Cruise Reception at 17:00 sharp		Poster Session (Academic Concourse)		Closing Reception Refreshment (Academic Concourse)					
18:00			Departure to Conference Banquet							

FLOOR PLAN



Symposium Venue:

- LTB: Lam Woo Lecture Theatre (B)
- LTD: Lee Wing Tat Lecture Theatre (D)
- LTF: Leung Yat Sing Lecture Theatre (F)
- LTG: Chow Tak Sin Lecture Theatre (G)

Room 1401: Preparation Room

Poster Session:

Academic Concourse

PROGRAM SCHEDULE

11 January 2004 (Sunday)

14:00 – 16:40	Registration
17:00 –	Departure to Harbour Cruise Reception at 17:00 sharp

12 January 2004 (Monday)

08:00 – 09:00	Registration		
09:00 – 09:30	Opening Ceremony		
09:30 – 10:30	Plenary Lecture #1 Frontiers in Industrial Process Automation – A Personal Perspective Peter Terwiesch, ABB Process Industries GmbH, GERMANY		
10:30 – 11:00	Coffee Break		
11:00 – 13:00	Oral Lectures #1		
	Session 1.1 Control Applications 1	Session 1.2 System Identification	Session 1.3 Control Monitoring and Fault Detection
13:00 – 14:00	Lunch		
14:00 – 15:10	Semi-Plenary Lectures SP #1		
	Session SP 1.1 Modelling and Identification	Session SP 1.2 Process and Control Monitoring	
15:10 – 15:40	Coffee Break		
15:40 – 17:40	Oral Lectures #2		
	Session 2.1 Model Predictive Control	Session 2.2 Modelling and Identification	Session 2.3 Statistical Process Monitoring and Application

13 January 2004 (Tuesday)

09:00 – 10:10	Semi-Plenary Lectures SP #2		
	Session SP 2.1 Scheduling and Optimization	Session SP 2.2 Model Based Control	
10:10 – 10:40	Coffee Break		
10:40 – 12:40	Oral Lectures #3		
	Session 3.1 Nonlinear and Robust Control	Session 3.2 Modelling and Control of Biochemical and Biomedical Systems	Session 3.3 Process Monitoring
12:40 – 13:50	Lunch		
13:50 – 15:30	Oral Lectures #4		
	Session 4.1 New Formulations and Issues in MPC	Session 4.2 Monitoring and Batch Processes	Session 4.3 Real Time Optimization and Scheduling
15:30 – 16:00	Coffee Break		
16:00 – 17:00	Plenary Lecture #2 A Learning Theory Approach to System Identification M. Vidyasagar, Tata Consultancy Services, INDIA		
17:00 – 18:00	Poster Session		
18:15 –	Departure to Conference Banquet		

14 January 2004 (Wednesday)

09:00 – 10:10	Semi-Plenary Lectures SP #3		
	Session SP 3.1 Batch and Semi-batch Control	Session SP 3.2 Process Control Applications	
10:10 – 10:40	Coffee Break		
10:40 – 12:40	Oral Lectures #5		
	Session 5.1 Robustness and Nonlinearity Analysis	Session 5.2 Subspace Approaches to Control and Monitoring	Session 5.3 Microelectronic Manufacturing Process Control Simulation and Control
12:40 – 13:50	Lunch		
13:50 – 15:30	Oral Lectures #6		
	Session 6.1 Control Applications 2	Session 6.2 Batch Process Modelling and Control	Session 6.3 Advances in Process Control
15:30 – 16:30	Plenary Lecture #3 A Systems Approach to Modelling and Analyzing Biological Regulation Francis J. Doyle III, University of California, Santa Barbara, USA		
16:30 – 17:00	Closing Ceremony		
17:00 – 18:00	Closing Reception		

DETAILED PROGRAM

12 January 2004 (Monday)

Plenary Lecture #1 09:30 – 10:30

LTB

Chair: F. Allgower

Frontiers in Industrial Process Automation – A Personal Perspective
Peter Terwiesch, ABB Process Industries GmbH, GERMANY

Oral Session #1 11:00 – 13:00

LTD Session 1.1 Control Applications 1	LTF Session 1.2 System Identification	LTG Session 1.3 Control Monitoring and Fault Detection
<p>Co-chairs: S. Skogestad, F. Doyle</p> <p>11:00 – 11:20 Modeling and Optimization on Energy Costs in Internal Thermally Coupled Distillation Columns of Non- Ideal Mixtures X. -G. Liu, J. -X. Qian, <i>Zhejiang University</i></p> <p>11:20 – 11:40 Multi-objective Robust Control of an Evaporation Process W. -J. Yan, <i>Zhejiang University</i> Y. Cao, <i>Cranfield Univeristy</i></p> <p>11:40 – 12:00 Nonlinear Control of a Fluid Catalytic Cracking Unit Q. Yang, S. -R. Li, X. -M. Tian, <i>University of Petroleum (East China)</i></p>	<p>Co-chairs: Y. Arkun, W. Marquardt</p> <p>11:00 – 11:20 Stochastic Grey-Box Modeling as a Tool for Improving the Quality of First Engineering Principles Models N. R. Kristensen, H. Madsen, S. B. Jørgensen, <i>Technical University of Denmark</i></p> <p>11:20 – 11:40 Identification of Multirate Sampled-Data Systems J. -D. Wang, T. -W. Chen, B. Huang, <i>University of Alberta</i></p> <p>11:40 – 12:00 System Identification from Multi-rate Data R. B. Gopaluni, H. Raghavan, S. L. Shah, <i>University of Alberta</i></p>	<p>Co-chairs: A. Cinar, C. Scali</p> <p>11:00 – 11:20 Development of a Technique for Performance Evaluation of Industrial Controllers C. Scali, M. Rossi, <i>University of Pisa</i> M. Amadei, <i>Polimeri Europa</i></p> <p>11:20 – 11:40 Performance Assessment of Constrained Controllers C. Georgakis, <i>Polytechnic University</i> L.-L. Huang, <i>Lehigh University</i></p> <p>11:40 – 12:00 Performance Envelopes of Process Intensified Systems S. R. Abd Shukor, M. T. Tham, <i>University of Newcastle upon Tyne</i></p>

<p>12:00 – 12:20</p> <p>Estimator Design with PLS Model for Consistent Control of Refinery Main Fractionators</p> <p>D. Pastore, A. Brambilla, G. Pannocchia, <i>University of Pisa</i></p>	<p>12:00 – 12:20</p> <p>Robust PID Tuning using Closed-Loop Identification</p> <p>Y. -C. Zhu, <i>Eindhoven University of Technology</i></p>	<p>12:00 – 12:20</p> <p>Fault Diagnosis Based on Limit Measurements of Process Variables</p> <p>H. A. Preisig, <i>Norwegian University of Science and Technology (NTNU)</i> Y. X. Xi, K. W. Lim, <i>National University Singapore</i></p>
<p>12:20 – 12:40</p> <p>Actuator Selection based upon Model Insights for an Energy Integrated Distillation Column</p> <p>H. W. Li, R. Gani, S. B. Jørgensen, <i>Technical University of Denmark</i></p>	<p>12:20 – 12:40</p> <p>Estimation of Reaction Rates by Nonlinear System Inversion</p> <p>W. Marquardt, A. Mhamdi, <i>RWTH Aachen</i></p>	<p>12:20 – 12:40</p> <p>Optimal Experimental Design for Training of a Fault Detection Algorithm</p> <p>T. Duever, S. J. Lou, H. Budman, <i>University of Waterloo</i></p>
<p>12:40 – 13:00</p> <p>Study on the Soft-Sensor and Control Scheme for an Industrial Azeotropic Distillation Column</p> <p>S. Zhang, C. -M. Bo, J. Li, C. -Y. Sun, Y. -R. Wang, <i>Nanjing University of Technology</i></p>	<p>12:40 – 13:00</p> <p>An Incremental Approach for the Identification of Reaction Kinetics</p> <p>W. Marquardt, M. Brendel, A. Mhamdi, <i>RWTH Aachen</i> D. Bonvin, <i>EPFL</i></p>	<p>12:40 – 13:00</p> <p>Fault Diagnosis and Fault Identification for Fault-Tolerant Control of Chemical Processes</p> <p>K. -K. Noh, E. S. Yoon, <i>Seoul National University</i></p>

Semi-Plenary Lectures SP #1 14:00 – 15:10

LTF Session SP 1.1 Modelling and Identification	LTG Session SP 1.2 Process and Control Monitoring
<p>Chair: J. Qin</p>	<p>Chair: B. Huang</p>
<p>14:00 – 14:35</p> <p>New Developments in Industrial MPC Identification</p> <p>Y. -C. Zhu, <i>Eindhoven University of Technology</i></p>	<p>14:00 – 14:35</p> <p>Digital Imaging for Process Monitoring and Control with Industrial Applications</p> <p>H. -L. Yu, J. F. MacGregor, <i>McMaster University</i></p>
<p>14:35 – 15:10</p> <p>Modelling and Control of Reactive Distillation Systems</p> <p>M. O. Tadé, B. H. Bisowarno, Y. -C. Tian, <i>Curtin University of Technology</i></p>	<p>14:35 – 15:10</p> <p>Monitoring Performance in Flexible Process Manufacturing</p> <p>E.B. Martin, A.J. Morris, <i>University of Newcastle</i></p>

Oral Session #2 15:40 – 17:40

LTD Session 2.1 Model Predictive Control	LTF Session 2.2 Modelling and Identification	LTG Session 2.3 Statistical Process Monitoring and Application
Co-chairs: M. Kothare, A. Vande Wouwer	Co-chairs: K. M. Ng, S. L. Shah	Co-chairs: E. S.Yoon, M. Kano
15:40 – 16:00 Constraint Handling in Reduced Order MPC: Application to Paper Machines Y. Arkun, <i>Koc University</i> A. Rigopoulos, <i>Weyerhaeuser Corp.</i>	15:40 – 16:00 A Complete Dynamic Model for Twin Screw Extruders Y. Le Gorrec, S. Choulak, F. Couenne, C. Jallut, <i>LAGEP</i> P. Cassagnau, A. Michel, <i>LMPB</i>	15:40 – 16:00 PCA with Efficient Statistical Testing Method for Process Monitoring F. -P. Mu, V. Venkatasubramanian, <i>Purdue University</i>
16:00 – 16:20 Simulation-Based Dual Mode Controller for Nonlinear Processes J. M. Lee, J. H. Lee, <i>Georgia Institute of Technology</i>	16:00 – 16:20 A Data-Driven Model for Valve Stiction S. L. Shah, M. A. A. S. Choudhury, <i>University of Alberta</i> N. F. Thornhill, <i>University College London</i>	16:00 – 16:20 Computation of the Performance of Shewhart Control Charts E. B. Martin, P. Mulder, J. Morris, <i>University of Newcastle</i>
16:20 – 16:40 Nonlinear Model Predictive Control of Multicomponent Distillation Columns using Wave Models S. Schwarzkopf, S. Grüner, I. Uslu, <i>Universität Stuttgart</i> A.Kienle, E. D. Gilles, <i>Max-Planck-Institut für Dynamik Komplexer technischer Systeme Magdeburg</i>	16:20 – 16:40 A Software Sensor for a Wastewater Treatment Plant T. Lopez, <i>Instituto Mexicano del Petróleo</i> A. Pulis, M. Mulas, R. Baratti, <i>Universita' di Cagliari</i>	16:20 – 16:40 Combined Multivariate Statistical Process Control M. Kano, S. Tanaka, S. Hasebe, I. Hashimoto, <i>Kyoto University</i> H. Ohno, <i>Kobe University</i>

<p>16:40 – 17:00</p> <p>Nonlinear Model Predictive Control of Cement Grinding Circuits</p> <p>R.Lepore, A. Vande Wouwer, M. Remy, <i>Faculté Polytechnique de Mons</i></p>	<p>16:40 – 17:00</p> <p>Experimental Verification of Gap Metric as a Tool for Model Selection in Multi-Linear Model-Based Control</p> <p>A. Palazoğlu, <i>University of California, Davis</i> O. Galán, <i>ABB Australia Limited Paper</i> J. A. Romagnoli, <i>University of Sydney</i> Y. Arkun, <i>Koç University</i></p>	<p>16:40 – 17:00</p> <p>Batch Monitoring through Common Subspace Models</p> <p>J. Morris, S. Lane, E. B. Martin, <i>University of Newcastle</i></p>
<p>17:00 – 17:20</p> <p>Optimal Operation and Control of a Reactive Simulated Moving Bed Process</p> <p>A.Toumi, S. Engell, <i>University of Dortmund</i></p>	<p>17:00 – 17:20</p> <p>Bayesian Estimation of Unconstrained Nonlinear Dynamic Systems</p> <p>W. -S. Chen, B. R. Bakshi, P. K. Goel, <i>Ohio State University</i> S. Ungarala, <i>Cleveland State University</i></p>	<p>17:00 – 17:20</p> <p>Application of PLS Based Regression for Monitoring Bitumen Recovery in a Separation Cell</p> <p>H. Raghavan, S. L. Shah, <i>University of Alberta</i> R. Kadali, B. Doucette, <i>Suncor Extraction</i></p>
<p>17:20 – 17:40</p> <p>Combinations of Measurements as Controlled Variables: Application to a Petlyuk Distillation Column</p> <p>V.Alstad, S. Skogestad, <i>Norwegian University of Science and Technology (NTNU)</i></p>	<p>17:20 – 17:40</p> <p>Multivariate Analysis of Process Data using Robust Statistical Analysis and Variable Selection</p> <p>L. H. Chiang, R. J. Pell, M. B. Seasholtz, <i>Dow Chemical Company</i></p>	<p>17:20 – 17:40</p> <p>Online Performance Monitoring and Quality Prediction for Batch Processes</p> <p>A.Cinar, C. Ündey, <i>Illinois Institute of Technology</i></p>

13 January 2004 (Tuesday)

Semi-Plenary Lectures SP #2 09:00 – 10:10

LTF	LTG
Session SP 2.1 Scheduling and Optimization	Session SP 2.2 Model Based Control
<p>Chair: S. Hasebe</p> <p>09:00 – 09:35 Combined On-Line and Run-To-Run Optimization of Batch Processes with Terminal Constraints C. Welz, B. Srinivasan, D. Bonvin, <i>École Polytechnique Fédérale de Lausanne</i></p> <p>09:35 – 10:10 Constrained Self-Optimizing Control via Differentiation Y. Cao, <i>Cranfield University</i></p>	<p>Chair: J. Lee</p> <p>09:00 – 09:35 A Framework for Design of Scheduled Output Feedback Model Predictive Control Z. -Y. Wan, M. V. Kothare, <i>Lehigh University</i></p> <p>09:35 – 10:10 Adaptive Backstepping Nonlinear Control of Bioprocesses D. Dochain, <i>Université Catholique de Louvain</i> M. Perrier, <i>Ecole Polytechnique de Montréal</i></p>

Oral Session #3 10:40 – 12:40

LTD	LTF	LTG
Session 3.1 Nonlinear and Robust Control	Session 3.2 Modelling and Control of Biochemical and Biomedical Systems	Session 3.3 Process Monitoring
<p>Co-chairs: A. Palazoglu, J. Hahn</p> <p>10:40 – 11:00 Design of Sub-Optimal Robust Gain-Scheduled PI Controllers H. M. Budman, J. -Y. Gao, <i>University of Waterloo</i></p>	<p>Co-Chairs: M. Henson, R. Parker</p> <p>10:40 – 11:00 Combined Metabolic and Cell Population Modelling for Yeast Bioreactor Control M. A. Henson, <i>University of Massachusetts</i> D. Müller, M. Reuss, <i>Universität Stuttgart</i></p>	<p>Co-Chairs: J. Alvarez, P. Terwiesch</p> <p>10:40 – 11:00 Process Monitoring Based on Nonlinear Wavelet Packet PCA Y. Qian, X. -X. Li, J. -F. Wang, Y. -B. Jiang, <i>South China University of Technology</i></p>

<p>11:00 – 11:20</p> <p>Adaptive Extremum Seeking Control of Continuous Stirred Tank Bioreactors</p> <p>M. Guay, <i>Queen's University</i> D. Dochain, <i>Université Catholique de Louvain</i> M. Perrier, <i>Ecole Polytechnique de Montréal</i></p>	<p>11:00 – 11:20</p> <p>Optimization of a Fed-Batch Bioreactor using Simulation-Based Approach</p> <p>J. H. Lee, N. S. Kaisare, <i>Georgia Institute of Technology</i> C.V. Peroni, <i>Universitat Rovira I Virgili</i></p>	<p>11:00 – 11:20</p> <p>Application of Statistical Process Monitoring with External Analysis to an Industrial Monomer Plant</p> <p>M. Kano, I. Hashimoto, <i>Kyoto University</i> T. Yamamoto, A. Shimameguri, M. Ogawa, <i>Mitsubishi Chemical Corporation</i></p>
<p>11:20 – 11:40</p> <p>Set Stabilization of a Class of Positive Systems</p> <p>B. A. Foss, L. Imsland, <i>Norwegian University of Science and Technology</i></p>	<p>11:20 – 11:40</p> <p>Glucose Control in Type I Diabetic Patients: A Volterra Model-Based Approach</p> <p>R. S. Parker, J. D. Rubb, <i>University of Pittsburgh</i></p>	<p>11:20 – 11:40</p> <p>On-Line Monitoring of a Copolymer Reactor: A Cascade Estimation Design</p> <p>T. Lopez, <i>Instituto Mexicano del Petróleo</i> J. Alvarez, <i>Universidad Autonoma Metropolitana – Iztapalapa</i> R. Baratti, <i>Universita' di Cagliari</i></p>
<p>11:40 – 12:00</p> <p>Stabilization of Gas Lifted Wells based on State Estimation</p> <p>B. A. Foss, G. O. Eikrem, L. Imsland, <i>Norwegian University of Science and Technology</i></p>	<p>11:40 – 12:00</p> <p>Biomass Reconstruction in a Wastewater Treatment Biofilter</p> <p>A. Vande Wouwer, C. Renotte, <i>Faculté Polytechnique de Mons</i> N. Deconinck, P. Bogaerts, <i>Université Libre de Bruxelles</i></p>	<p>11:40 – 12:00</p> <p>A Robust PCA Modeling Method for Process Monitoring</p> <p>D. Wang, J. A. Romagnoli, <i>University of Sydney</i></p>
<p>12:00 – 12:20</p> <p>H-Infinity Control of Descriptor Systems: An Application from Binary Distillation Control</p> <p>A. Rehm, F. Allgöwer, <i>Universität Stuttgart</i></p>	<p>12:00 – 12:20</p> <p>An Optical Operating Strategy for Fed-Batch Fermentations by Feeding the Overflow Metabolite</p> <p>S. Valentinotti, C. Cannizzaro, B. Srinivasan, D. Bonvin, <i>Ecole Polytechnique Fédérale de Lausanne</i></p>	<p>12:00 – 12:20</p> <p>A Framework for On-Line Trend Extraction and Fault Diagnosis</p> <p>V. Venkatasubramanian, M. R. Maurya, <i>Purdue University</i> R Rengaswamy, <i>Clarkson University</i></p>
<p>12:20 – 12:40</p> <p>Cascade Control of Unstable Systems with Application to Stabilization of Slug Flow</p> <p>S. Skogestad, E. Storkaas, <i>Norwegian University of Science and Technology</i></p>	<p>12:20 – 12:40</p> <p>Target-set Control</p> <p>R. K. Pearson, <i>Thomas Jefferson University</i> B. A. Ogunnaiké, <i>University of Delaware</i></p>	<p>12:20 – 12:40</p> <p>Application of Software Sensors for Monitoring and Prediction in Fermentation Processes</p> <p>M. Thaysen, S. B. Jørgensen, <i>Technical University of Denmark</i></p>

Oral Session #4 13:50 - 15:30

<p align="center">LTD Session 4.1 New Formulations and Issues in MPC</p>	<p align="center">LTF Session 4.2 Monitoring and Batch Processes</p>	<p align="center">LTG Session 4.3 Real Time Optimization and Scheduling</p>
<p>Co-chairs: S. Engell, S. L. Shah</p>	<p>Co-chairs: H. Preisig, E. B. Martin</p>	<p>Co-chairs: C. C. Yu, T. E. Marlin</p>
<p>13:50 – 14:10 Developments in Multi-Rate Predictive Control J. A. Rossiter, <i>Sheffield University</i> T. -W. Chen, S.L. Shah, <i>University of Alberta</i></p>	<p>13:50 – 14:10 Investigation of Calibration-Free Resolution Techniques and Independent Component Analysis E.B. Martin, S. Triadaphillou, I. Wells, J.A. Morris, <i>University of Newcastle</i></p>	<p>13:50 – 14:10 Combined Real-Time and Iterative Learning Control Technique with Decoupled Disturbance Rejection for Batch Processes S. J. Qin, I. S. Chin, <i>University of Texas at Austin</i> K. S. Lee, M. Cho, <i>Sogang University</i></p>
<p>14:10 – 14:30 Nonlinear Predictive Control in the LHC Accelerator C. de Prada, S. Cristea, <i>University of Valladolid</i> E. Blanco, J. Casas, <i>CERN</i></p>	<p>14:10 – 14:30 Stage-Based Multivariate Statistical Analysis for Injection Molding F. -R. Gao, N. -Y. Lu, Y. Yang, <i>the Hong Kong University of Science & Technology</i> F. -L. Wang, <i>Northeastern University</i></p>	<p>14:10 – 14:30 Results Analysis in a Constrained Real-Time Optimization (RTO) System T. E. Marlin, W. S. Yip, <i>McMaster University</i></p>
<p>14:30 – 14:50 Disturbance Attenuation with Actuator Constraints by Moving Horizon H-Infinity Control Chen, <i>Jilin University</i> C. W. Scherer, <i>Delft University of Technology</i></p>	<p>14:30 – 14:50 Nonlinear Control of a Batch Reactor in the Presence of Uncertainties Y. Samyudia, H. Sibarani, <i>McMaster University</i> P. L. Lee, <i>Curtin University of Technology</i></p>	<p>14:30 – 14:50 Predictive Scheduling of a Penicillin Bioprocess Plant S. Lau, M. J. Willis, G. A. Montague, J. Glassey, <i>University of Newcastle</i></p>
<p>14:50 – 15:10 An LMI-based Constrained MPC Scheme with Time-Varying Terminal Cost B. Pluymers, L. Roobrouck, J. Buijs, J. A. K. Suykens, B. De Moor, <i>ESAT-SCD-SISTA</i></p>	<p>14:50 – 15:10 Modeling and Model Based Feeding Control for <i>Pichia pastoris</i> fed-batch cultivation J. -Q. Yuan, H. -T. Ren, <i>Shanghai Jiao Tong University</i> J. -H. Deng, B. -K. He, L.-M. Ren, <i>North China Pharmaceutical Company</i></p>	<p>14:50 – 15:10 Modeling and Optimization for High-Throughput-Screening Systems E. Mayer, J. Raisch, <i>Max-Planck-Institut Magdeburg</i></p>

<p>15:10 – 15:30</p> <p>Computational Delay in Nonlinear Model Predictive Control</p> <p>R. Findeisen, F. Allgöwer, <i>University of Stuttgart</i></p>	<p>15:10 – 15:30</p> <p>Feedforward Control of Batch Crystallisers - an Approach based on Orbital Flatness</p> <p>U. Vollmer, J. Raisch, <i>Max-Planck-Institut Magdeburg</i></p>	<p>15:10 – 15:30</p> <p>Variance-Constrained Filtering for Uncertain Stochastic Systems with Missing Measurements</p> <p>Z. D. Wang, <i>Brunel University</i> W. C. Ho, <i>City University of Hong Kong</i></p>
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Plenary Lecture #2 16:00 – 17:00

LTB

Chair: W. Marquardt

A Learning Theory Approach to System Identification

M. Vidyasagar, *Tata Consultancy Services*

R. L. Karandikar, *Indian Statistical Institute*

14 January 2004 (Wednesday)

Semi-Plenary Lectures SP #3 14:00 – 15:10

LTF Session SP 3.1 Batch and Semi – Batch Control	LTG Session SP 3.2 Process Control Applications
Chair: D. Bonvin	Chair: B. Foss
09:00 – 09:35 Advances in the Modeling and Control of Batch Crystallizers Z. K. Nagy, J. W. Chew, M. Fujiwara, R. D. Braatz, <i>University of Illinois at Urbana-Champaign</i>	09:00 – 09:35 MPC in Statoil – Advantages with In-House Technology S. Strand, J. R. Sagli, <i>Statoil R&D, Process Control</i>
09:35 – 10:10 Joint Process and Control Designs of a Semibatch Emulsion Polymerization Reactor F. Zaldo, M. Hernández, <i>Centro de Investigación en Polímeros</i> J. Álvarez, <i>Universidad Nacional Autónoma de México</i>	09:35 – 10:10 Modeling and Control of Thermal Microsystems Y. J. Lee, S. Park, <i>Korea Advanced Institute of Science and Technology</i> S. W. Sung, <i>LG Chem. Ltd. Research Park</i> D. S. Yoon, G. Lim, <i>Samsung Advanced Institute of Technology</i>

Oral Session #5 10:40 – 12:40

LTD Session 5.1 Robustness and Nonlinearity Analysis	LTF Session 5.2 Subspace Approaches to Control and Monitoring	LTG Session 5.3 Microelectronic Manufacturing Process Control Simulation and Control
Co-Chair: J. Hahn, N. Hernjak	Co-Chairs: J. Qin, B. Huang	Co-Chairs: R. Adomaitis, R. Braatz
10:40 – 11:00 Robust Tuning of Feedback Linearizing Controllers via Bifurcation Analysis J. Hahn, M. Mönnigmann, W. Marquardt, <i>RWTH Aachen</i>	10:40 – 11:00 Modified Subspace-Identification Method for Building A Long-Range Prediction Model for Inferential Control J.H. Lee, Y. -D. Pan, <i>Georgia Institute of Technology</i>	10:40 – 11:00 Nonlinear Feedback Control of a Coupled Kinetic Monte Carlo-Finite Difference Code R. D. Braatz, E. Rusli, T. O. Drews, D. L. Ma, R. C. Alkire, <i>University of Illinois at Urbana-Champaign</i>

<p>11:00 – 11:20</p> <p>Closed Loop Properties and Block Relative Gain</p> <p>J. F. Forbes, V. Kariwala, E. S. Meadows, <i>University of Alberta</i></p>	<p>11:00 – 11:20</p> <p>Model Identification and Error Covariance Matrix Estimation from Noisy Data using PCA</p> <p>S. L. Shah, <i>University of Alberta</i></p> <p>S. Narasimhan, <i>Indian Institute of Technology</i></p>	<p>11:00 – 11:20</p> <p>Optimal Control of Transient Enhanced Diffusion</p> <p>R. D. Braatz, R. Gunawan, M. Y. L. Jung, E. G. Seebauer, <i>University of Illinois at Urbana-Champaign</i></p>
<p>11:20 – 11:40</p> <p>A Tool to Analyze Robust Stability for Constrained MPC</p> <p>L. O. Santos, J. A. A. M. Castro, <i>Universidade de Coimbra</i></p> <p>L. T. Biegler, <i>Carnegie Mellon University</i></p>	<p>11:20 – 11:40</p> <p>Nonlinear Subspace Model Identification</p> <p>A. Cinar, J. DeCicco, <i>Illinois Institute of Technology</i></p>	<p>11:20 – 11:40</p> <p>Application of Reduced-Rank Multivariate Methods to the Analysis of Spatial Uniformity of Silicon Wafer Etching</p> <p>P. Misra, M. Nikolaou, <i>University of Houston</i></p> <p>A. D. Bailey III, <i>Lam Research Corporation</i></p>
<p>11:40 – 12:00</p> <p>Relationship between Control-Relevant Nonlinearity and Performance Objective</p> <p>N. Hernjak, <i>University of Delaware</i></p> <p>F. J. Doyle III, <i>University of California, Santa Barbara</i></p> <p>F. Allgöwer, T. Schweickhardt, <i>Universität Stuttgart</i></p>	<p>11:40 – 12:00</p> <p>Semi-Batch Trajectory Control in Reduced Dimensional Spaces</p> <p>J. Flores-Cerrillo, J. F. MacGregor, <i>McMaster University</i></p>	<p>11:40 – 12:00</p> <p>Real-Time Feedback Control of Carbon Content of Zirconium Dioxide Thin Films Using Optical Emission Spectroscopy</p> <p>P. D. Christofides, N. Dong, Y. Lou, S. Lao, J. P. Chang, <i>University of California, Los Angeles</i></p>
<p>12:00 – 12:20</p> <p>Effect of Process Nonlinearity on Linear Quadratic Regulator Performance</p> <p>M. Guay, R. Dier, P. J. McLellan, <i>Queen's University</i></p>	<p>12:00 – 12:20</p> <p>A Subspace Approach to MIMO Control Performance Monitoring and Diagnosis</p> <p>S. J. Qin, <i>University of Texas at Austin</i></p> <p>C.A. McNabb, <i>Boise Paper Solutions</i></p>	<p>12:00 – 12:20</p> <p>Design, Simulation, and Experimental Testing of a Spatially Controllable CVD Reactor</p> <p>R. A. Adomaitis, J. -O. Choo, G. W. Rubloff, L. Henn-Lecordier, Y. -J. Liu, <i>University of Maryland</i></p>
<p>12:20 – 12:40</p> <p>Lower Limit on Controller Gain for Acceptable Disturbance Rejection</p> <p>S. Skogestad, <i>Norwegian University of Science and Technology (NTNU)</i></p>	<p>12:20 – 12:40</p> <p>Multivariate Controller Performance Assessment without Interactor Matrix – a Subspace Approach</p> <p>B. Huang, R. Kadali, <i>University of Alberta</i></p>	

Oral Session #6 13:50 –15:30

LTD Session 6.1 Control Application 2	LTF Session 6.2 Batch Process and Control	LTG Session 6.3 Advances in Process Control
<p>Co-chairs: D. Dochain, J. Rieber</p> <p>13:50 –14:10 Model-Based Trajectory Control of Pressure Swing Adsorption Plants M. Bitzer, K. Graichen, M. Zeitz, <i>Universität Stuttgart</i></p> <p>14:10 – 14:30 Control of Gasholder Level by Trend Prediction based on Time-Series Analysis and Process Heuristics C. Han, Y. -H. Chu, J. H. Kim, <i>Pohang University of Science and Technology</i> S. J. Moon, I. S. Kang, <i>Pohang Iron and Steel Company</i> S. J. Qin, <i>University of Texas at Austin</i></p> <p>14:30 – 14:50 Setting of Injection Velocity Profile via an Iterative Learning Control Approach F. -R. Gao, Y. Yang, <i>The Hong Kong University of Science and Technology</i></p>	<p>Co-chairs: C. Georgakis, S. B. Jørgensen</p> <p>13:50 – 14:10 Feedback Control of Industrial Solution Polymerization of Acrylic Acid using NIR Measurements G. Févotte, N. Othman, <i>Université Lyon 1</i> J. B. Egraz, J. M. Sau, <i>COATEX</i></p> <p>14:10 – 14:30 Data-Driven Modeling of Batch Processes D. Bonn�, S. B. Jørgensen, <i>Technical University of Denmark</i></p> <p>14:30 – 14:50 Two-dimensional Population Balance Modeling of Semi-Batch Organic Solution Crystallization G. Févotte, F. Puel, <i>Université Lyon 1</i></p>	<p>Co-chairs: S. Pistikopoulos, B. Srinivasan</p> <p>13:50 –14:10 Robust Iterative Learning Control Design based on Gradient Method S. Liu, T. -J. Wu, <i>Zhejiang University</i></p> <p>14:10 – 14:30 Compensator for Internet-based Advanced Control S. -H. Yang, X. Chen, <i>Loughborough University</i></p> <p>14:30 – 14:50 Model-Based Auto-Tuning System Using Relay Feedback H. -P. Huang, K. -Y. Luo, <i>National Taiwan University</i></p>

<p>14:50 – 15:10</p> <p>Dynamics of Process Networks with Recycle and Purge: Time Scale Separation and Model Decomposition</p> <p>P. Daoutidis, M. Baldea, <i>University of Minnesota</i> A. Kumar, <i>GE Corporate Research and Development</i></p>	<p>14:50 – 15:10</p> <p>Calorimetric Estimation of Viscosity and Acid Number in Alkyd Reactors</p> <p>I. S. de Buruaga, <i>Centro de Investigación en Polímeros</i> T. Lopez, S. Pérez, J. Alvarez, <i>Universidad Autónoma Metropolitana-Iztapalapa</i></p>	<p>14:50 – 15:10</p> <p>The Explicit Model-Based Tracking Control Law via Parametric Programming</p> <p>E. N. Pistikopoulos, V. Sakizlis, J. D. Perkins, <i>Imperial College London</i></p>
<p>15:10 – 15:30</p> <p>Youla-Kučera Parametrisation in Self-Tuning LQ Control of a Chemical Reactor</p> <p>J. Mikleš, L. Čirka, M. Fikar, <i>Slovak University of Technology in Bratislava</i></p>	<p>15:10 – 15:30</p> <p>State Estimation in Batch Crystallization using Reduced Population Models</p> <p>S. Motz, S. Mannal, E. D. Gilles, <i>Universität Stuttgart</i></p>	<p>15:10 – 15:30</p> <p>Discrete Control of Nearly Integrable Two-Dimensional Continuous Systems</p> <p>S. Blouin, M. Guay, K. Rudie, <i>Queen's University</i></p>

Plenary Lecture #3 15:30 – 16:30

LTB

Chair: F. -R. Gao

A Systems Approach to Modelling and Analyzing Biological Regulation
F. J. Doyle III, *University of California, Santa Barbara*

13 January 2004 (Tuesday)

Poster Session 17:00 –18:00

Chair: F. -R. Gao

Area 1 Process and Control Monitoring

- P1-1 Variance Estimation in Multisensor Fusion Algorithm**
C. -Q. Zhong, X. -L. Dong, L.-Y. Zhang, Y. Cao, *Dalian University of Technology*
- P1-2 Respirometry Estimations Based Monitoring of Biological Wastewater Treatment Processes**
D. -C. Yuan, L.-P. Fan, H. -B. Yu, *Shenyang Institute of Automation*
- P1-3 Wavelet Packet Images Matching Applied to Noise Faults Diagnosis**
C. Lu, G. -Z. Wang, *Tsinghua University*
Q. -G. Qiu, *Dalian University of Technology*
- P1-4 Performance Monitoring based on Characteristic Subspace**
M. Guo, S. -Q. Wang, *Zhejiang University*
- P1-5 Sensing of the Dry Point of Benzene using PCA and DRBFN**
Y. -Q. Chang, F. -L. Wang, *Northeastern University*
F. -R. Gao, *The Hong Kong University of Science and Technology*
- P1-6 A Fault Diagnosis Method for Fermentation Process**
L.-L. Ma, F. -L. Wang, Y. -B. Jiang, *Northeastern University*
F. -R. GAO, *The Hong Kong University of Science and Technology*
- P1-7 Multi-PCA Models for Process Monitoring and Fault Diagnosis**
L.-L. Ma, Y. -B. Jiang, F. -L. Wang, *Northeastern University*
F. -R. Gao, *Hong Kong University of Science and Technology*
- P1-8 A Fault Accommodation Control For Nonlinear Processes**
Y. -W. Zhang, F. -L. Wang, G. Yu, *Northeastern University*
F. -R. Gao, *The Hong Kong University of Science & Technology*
- P1-9 A Novel Detection of Vessel Liquid Level based on Echo Identification**
Z. -H. Zhang, J. -M. Yuan, *University of Science and Technology Beijing*
W. -Y. Huang, *Southeast University*
- P1-10 Multi-Site Performance Monitoring in Batch Pharmaceutical Production**
C. W. L. Wong, A. J. Morris and E. B. Martin, *University of Newcastle*
R. E. A. Escott, *GlaxoSmithKline Chemical Development*
- P1-11 Process Monitoring of an Electro-Pneumatic Valve Actuator Using Kernel Principal Component Analysis**
S. -O. Song, G. Lee, E. S. Yoon, *Seoul National University*

P1-12 Real-Time Application of Scheduling Quasi-Minmax Model Predictive Control to a Bench-Scale Neutralization

Y. -H. Lu, *Georgia Institute of Technology*

Y. Arkun, *KOC University*

A. Palazoglu, *University of California at Davis*

P1-13 Fault-Tolerant Control of Process Systems: Integrating Supervisory and Feedback Control over Networks

N. H. El-Farra, A. Gani, P. D. Christofides, *University of California, Los Angeles*

Area 2 Real-Time Optimization and Scheduling

P2-1 Real-Time Optimization of Distillation Column via Sliding Modes

A. Y. Torgashov, K. -C. Park, H. -C. Choi, Y. -K. Choe, *Samsung Fine Chemicals Co., Ltd.*

P2-2 A Receding Optimization Control Policy for Production Systems with Quadratic Inventory Costs

C. -Y. Song, H. Wang, P. Li, *Zhejiang University*

P2-3 Hard Real-Time CORBA (HRTC) for Process Control Systems

S. Galán, M. Rodríguez, R. Sanz, *Universidad Politécnica de Madrid*

P2-4 A Disaggregation Technique for the Optimal Planning of Offshore Platforms

M. C. A. Carvalho, *University of Sao Paulo*

J. M. Pinto, *Polytechnic University*

Area 3 Process and Control Applications

P3-1 Analysis and Modeling of Industrial Purified Terephthalic Acid Oxidation Process

S. -J. Mu, H. -Y. Su, R. -L. Liu, Y. Gu, J. Chu, *Zhejiang University*

P3-2 Analyzing the Start-Up of Reactive Distillation Columns

F. Reepmeyer, J. -U. Repke, G. Wozny, *Technical University Berlin*

P3-3 Plantwide Economical Dynamic Optimization: Application on a Borealis Borstar Process Model

W. Van Brempt, P. Van Overschee, T. Backx, *IPCOS*

Ø. Moen, *Borealis*

C. Kiparissides, C. Chatzidoukas, *Aristotle University of Thessaloniki*

P3-4 Fuzzy Neural Network for Predicting 4-CBA Concentration of PTA Process

R. -L. Liu, Y. -X. Wang, H. -Y. Su, S. -J. Mu, Y. -Y. Hu, W. -Q. Chen, J. Chu, *Zhejiang University*

P3-5 Designing Neurofuzzy System based on Improved CART Algorithm

L. Jia, E. -G. Li, J. -S. Yu, *East China University of Science and Technology*

P3-6 Hybrid Control of a Four Tanks System

C. de Prada, S. Cristea, *University of Valladolid*

D. Megías, J. Serrano, *Universitat Autònoma de Barcelona*

- P3-7 Temperature Control of Butyl Propionate Reactive Distillation**
 S. -G. Huang, *National Taiwan University of Science and Technology*
 C. -C. Yu, *National Taiwan University*
- P3-8 Design and Control for Recycle Process with Tubular Reactor**
 Y. -H. Chen, *National Taiwan University of Science and Technology*
 C. -C. Yu, *National Taiwan University*
- P3-9 Optimal Control of Fluid Catalytic Cracking Unit**
 Q. -Y. Jiang, Z. -K. Cao, J. Cai, H. Zhou, *Xiamen University*
 Z. -L. Chen, C. -L. Wang, X. -L. Chen, M. -B. Deng, *China Petroleum & Chemical Corporation Guangzhou Branch*
- P3-10 Modeling and Advanced Process Control (APC) for Distillation Columns of Linear Alkylbenzene Plant**
 X. -M. Jin, G. Rong, S. -Q. Wang, *Zhejiang University*

Area 4 Model-Based Control

- P4-1 A Robust Iterative Learning Control with Neural Networks for Robot**
 C. Shao, J. Nie, *Dalian University of Technology*
 F. -R. Gao, *The Hong Kong University of Science and Technology*
- P4-2 Robust Stable Adaptive Control of Uncertain Bilinear Plants and It's Application for Distillation Column**
 C. Shao, G. Luo, *Dalian University of Technology*
 F. -R. Gao, *The Hong Kong University of Science and Technology*
- P4-3 Combined Gain-Scheduling and Multimodel Control of a Reactive Distillation Column**
 B. H. Bisowarno, Y. -C. Tian, M. O. Tadé, *Curtin University of Technology*
- P4-4 Constructing Takagi-Sugeno Fuzzy Model based on Modified Fuzzy Clustering Algorithm**
 Z. -Y. Xing, L.-M. Jia, T. -Y. Shi, Y. Qin, Q. -H. Jiang, *China Academy of Railway Science*
- P4-5 Nonlinear Predictive Functional Control based on Artificial Neural Network**
 Q. -L. Zhang, L. Xie, S. -Q. Wang, *Zhejiang University*
- P4-6 Computational Intelligence (CI) Self-Adaptive PID (CISAPID)**
 M. -Z. Yi, Y. Qin, L.-M. Jia, *China Academy of Railway Sciences*
- P4-7 Robust Stability Analysis for Descriptor Systems with State Delay and Parameter Uncertainty**
 S. -Y. Xu, J. Lam, *University of Hong Kong*
 C. -W. Yang, *Nanjing University of Science and Technology*
- P4-8 Zone Model Predictive Control Algorithm Using Soft Constraint Method**
 Z. -H. Xu, J. Zhao, J. -X. Qian, *Zhejiang University*
- P4-9 Evaluation Method and Workbench for APC Strategies**
 G. Reinig, B. Mahn, M. Boll, *Ruhr University of Bochum*

- P4-10 Non-Fragile PID Stabilizing Controller on Second-Order Systems with Time Delay**
J. -M. Xu, L. Yu, *Zhejiang University of Technology*
- P4-11 A Method of Controlling Unstable, Non-Minimum-Phase, Nonlinear Processes**
C. Panjapornpon, M. Soroush, *Drexel University*
W. D. Seider, *University of Pennsylvania*
- P4-12 Design of a Sliding Mode Control System based on an Identified SOPDT Model**
C. -T. Chen, S. -T. Peng, *Feng Chia University*
- P4-13 Nonlinear MIMO Adaptive Predictive Control based on Wavelet Network Model**
D. -X. Huang, Y. -H. Wang, Y. -H. Jin, *Tsinghua University*
- P4-14 Input-Output Pairing of Multivariable Predictive Control**
L.-C. Chen, *GAIN Tech Co.*
P. Yuan, G. -L. Zhang, *University of Petroleum*
- P4-15 Generalized Predictive Control for a Class of Bilinear Systems**
G. -Z. Liu, P. Li, *Liaoning University of Petroleum & Chemical Technology*
- P4-16 Nonlinear Model Predictive Control using a Neural Network**
R. -D. Zhang, P. Li, *Liaoning University of Petroleum & Chemical Technology*
- P4-17 Process Optimization and Control under Chance Constraints**
P. Li, M. Wendt, H. Arellano-Garcia, G. Wozny, *Technische Universität Berlin*
- P4-18 Adaptive Extremum Seeking Control of Nonisothermal Continuous Stirred Tank Reactors**
M. Guay, *Queen's University*
D. Dochain, *Université Catholique de Louvain*
M. Perrier, *Ecole Polytechnique de Montréal*
- P4-19 On the Use of Controller Parameterization in the Optimal Design of Dynamically Operable Plants**
K. G. Dunn, C. L. E. Swartz, *McMaster University*
- P4-20 Improved Performance of Robust MPC with Feedback Model Uncertainty**
A. L. Warren and T. E. Marlin, *McMaster University*
- P4-21 Adaptive Extremum Seeking Output Feedback Control for a Continuous Stirred Tank Bioreactor**
N. I. Marcos, M. Guay, *Queen's University*
D. Dochain, *Université Catholique de Louvain*
- P4-22 A BMI-Based Design of Switched PID Controllers**
J. Aoyama, K. Konishi, T. Yamamoto, T. Hinamoto, *Hiroshima University*
- P4-23 Hybrid Control: Implementing Output Feedback MPC with Guaranteed Stability Region**
P. Mhaskar, N. H. El-Farra, P. D. Christofides, *University of California, Los Angeles*

P4-24 An Internal Model Control for Max-Plus Linear Systems with Linear Parameter Varying Structure

S. Masuda, T. Amemiya, *Tokyo Metropolitan Institute of Technology*
H. Goto, K. Takeyasu, *Japan Research Institute*

Area 5 Modeling and Identification

P5-1 Hybrid strategy for parameter estimation and PID tuning

L. Wang, D. -Z. Zheng, D. -X. Huang, *Tsinghua University*

P5-2 Integration of Product Quality Estimation and Operating Condition Monitoring for Efficient Operation of Industrial Ethylene Fractionator

H. Kamohara, A. Takinami, M. Takeda, *Showa Denko K.K.*
M. Kano, S. Hasebe, I. Hashimoto, *Kyoto University*

P5-3 On-Line Lower-Order Modeling Using Fuzzy Systems

A. B. Rad, H. F. Ho, Y. K. Wong, W. L. Lo, *the Hong Kong Polytechnic University*

P5-4 A Novel Soft Sensor Modeling for Gasoline Endpoint of the Crude Unit

X. -M. Tian, G. -C. Chen, *University of Petroleum*

P5-5 State and Parameter Estimation through Dynamic Bayesian Forecasting

Z. Lu, E. Martin, J. Morris, *University of Newcastle*

P5-6 Heat Transfer in a Cable Penetration Fire Stop System

S. -P. Kwon, J. Cho, S. -O. Song, W. Kim, E. S. Yoon, *Seoul National University*

P5-7 Modeling of Metabolic Systems using Global Optimization Methods

E. P. Gatzke, *University of South Carolina*
E. O. Voit, *Medical University of South Carolina*

P5-8 A State-Shared Modeling Approach to Transition Control

Z. -H. Tian, K. A. Hoo, *Texas Tech University*

Area 6 Batch Process Modeling and Control

P6-1 Temperature Control of the Batch Polypropylene Reactor by ADRC

Y. -Q. Wang, X. -F. Zhu, *South China University of Technology*

P6-2 Fermentation Batch Process Monitoring by Step-By-Step Adaptive MPCA

N. He, L. Xie, S. -Q. Wang, J. -M. Zhang, *Zhejiang University*

P6-3 Improved Operation of a Batch Polymerization Reactor through Batch-To-Batch Iterative Optimization

Z. -H. Xiong, J. Zhang, *University of Newcastle*

P6-4 Kappa Number Prediction by Hybrid Model for Batch Pulp Cooking Process

Y. Li, J. Zhang, X. -F. Zhu, D. -P. Huang, *South China University of Technology*

P6-5 A Modular Batch Laboratory Process

R. Olsson, K. -E. Årzen, *Lund Institute of Technology*

OFFICIAL & SOCIAL PROGRAM

Welcoming Reception - Harbour Cruise



Date: 11 January, 2004 (Sunday)

Assembly point: Entrance Piazza, HKUST at 17:00 sharp

Harbour Cruise – Bauhinia, will take you to see many famous landmarks that illustrate vibrancy and natural beauty of Hong Kong. You can enjoy a magnificent sunset view of Victoria Harbour and relax with the food and drinks served on board. The journey will take approximately 2 hours, from **17:45 to 19:45** along with live band music.

Transportation has been arranged to pick up participants from the Entrance Piazza of HKUST to the embarkation pier and from the disembarkation pier to the Tsim Sha Tsui area (hotel area).

Opening Ceremony

Date: 12 January, 2004 (Monday)

Time: 09:00 - 09:30

Venue: Lecture Theatre B, HKUST



Banquet

Enjoy a banquet of seafood and different dishes of delicacies with Chinese cultural and variety shows at a "floating" restaurant.



Date: 13 January, 2004 (Tuesday)

Time: 18:00 - 21:30

Assembly point: Entrance Piazza, HKUST at 18:00

Venue: Jumbo Floating Restaurant, Aberdeen, Hong Kong

Closing Ceremony

Date: 13 January, 2004 (Wednesday)

Time: 16:30 – 17:00

Venue: Lecture Theatre B, HKUST

Closing Reception

Date: 13 January, 2004 (Wednesday)

Time: 17:00 – 18:00

Venue: Academic Concourse, HKUST

OPTIONAL TOUR PROGRAM

1. Hong Kong Island Tour

Price: HK\$220 per person

Time: 09:00 - 13:00 (daily departure)

Departure point: listed hotel

Itinerary: the first stop of this tour takes you to the Peak, which rises 544m above sea-level, offers a spectacular view of hustle and bustle of this extraordinary city. From the Peak, we proceed downhill along the coastal road to Repulse Bay. This seaside resort is one of Hong Kong most popular beaches. Just around the corner is the Stanley Market where silk designer clothing, hand-painted porcelain and souvenir items overflow from the shops onto the narrow lanes. Shopping at Stanley Market is always fun and there are many bargains to be found. The final stop on the tour is Aberdeen where traditional Chinese values and ancient customs are easily observed. Once a small fishing village, Aberdeen is now a thriving town best known for the many junks, houseboats and floating restaurants.



2. The Land Between Tour with Chinese lunch

Price: HK\$395 per person

Time: 08:30 - 15:00 (daily departure)

Departure points:

8:30 at Main Entrance of City Hall “Low Block” facing Victoria Harbour

9:00 at Lobby of “The Salisbury” - YMCA, Tsim Sha Tsui

Itinerary: visit the New Territories which abounds in rural beauty. Stops will be made at Yuen Yuen Institute, Tai Mo Shan, Luk Keng, Sam Mun Tsai Fishing Village. The New Territories is an enormously diverse suburban area full of contrasts to the cosmopolitan city center. The Land Between stands both as a gentle reminder of the past of Hong Kong as well as a symbol of its hopes and plans for the future.



3. Tsing Ma Lantau Monastery Tour

Price: HK\$560 per person

Time: 09:00 - 17:00 (daily departure except Sundays & Holidays)

Departure point: listed hotel

Itinerary: spend a relaxing day in one of the largest outlying islands in Hong Kong - Lantau Island. You can visit through Tsing Ma Bridge to Cheung Sha Beach, Tai-O Fishing Village and Po Lin Monastery with the world's largest outdoor bronze Buddha. Chinese vegetarian lunch is included.



4. Macau Tour with Lunch

Price: HK\$620 per person

Time: 08:45 - 19:30 (daily departure)

Departure point: listed hotel

Itinerary: a 75 minutes Turbojet (or Turbocat/Catamaran) ride brings you to the previous Portuguese enclave - Macau. Visit Kum Yam Temple, up to Penha Hill for a magnificent view of the city, Barrier Gate at the border between Macau and China and the Ruins of St. Paul's Cathedral. A western lunch will be served and followed by free time to visit Casino Lisboa.



- Rates quoted are Net in Hong Kong Dollars, based on SEAT-IN-COACH; subject to change.
- Full refund will be made if booking is cancelled 7days prior to tour departure date.

Reservation & Enquiries

For details and reservation concerning the optional sightseeing tours and hotel, please contact:

Ms. Veronica Cheng / Ms. Rachel Lee

PC TOURS AND TRAVEL

Address: B128 Royal Garden Hotel, 69 Mody Road, Tsim Sha Tsui East, Kowloon, Hong Kong

Tel.: +852 2369 9052

Fax: +852 2723 9044

Email: pc@pctourshk.com

REGISTRATION

ADCHEM 2003

International Symposium on Advanced Control of Chemical Processes
Hong Kong University of Science and Technology, Hong Kong, China
January 11-14, 2004

Office Use Only Registration No.

Registration Form (Please type or print clearly)

Prof. Dr. Mr. Ms. First Name: _____ Last Name: _____
 Affiliation (Including Division/Dept.): _____
 Mailing Address: _____
 Postal Code: _____ City: _____ Country: _____
 Phone: _____ Fax: _____ E-mail: _____
 Accompanying Person: First Name: _____ Last Name: _____

Registration Fee (please check the appropriate box and fill in the number & payment amount)

Category	Early Registration (on or before October 10, 2003)	Late Registration (after October 10, 2003)	Number	Payment Amount
Full-fee Participant	<input type="checkbox"/> US\$450	<input type="checkbox"/> US\$500	x	= US\$
Student	<input type="checkbox"/> US\$225	<input type="checkbox"/> US\$250	x	= US\$
Accompanying Person	US\$100		x	= US\$
Additional Reception	US\$40		x	= US\$
Additional Banquet	US\$60		x	= US\$
Additional Proceeding	US\$40		x	= US\$
Total				*US\$

* Note that HK dollars can also be accepted with the rate of US\$1=HK\$7.8

To help us to plan the reception, please indicate if you will join the boat reception on 11 January 2004? Yes No

- Fee for Full-fee Participant includes: symposium proceeding, reception, lunches & refreshments for January 12-14 and banquet
- Fee for Student includes: symposium proceeding, reception and lunches & refreshments for January 12-14
- Fee for Accompanying Person includes: reception and banquet
- Cancellation: Written cancellations received before November 15, 2003 will be subjected to an administrative charge of US\$50. No refund will be issued after this date. Refund will be made after the conference period, after deducting the administrative charge.

Payment may be made by: (please check the appropriate box)

<input type="checkbox"/> USD Bank check/draft	Please enclose herewith a bank check/draft made payable to "The Hong Kong University of Science and Technology"		
<input type="checkbox"/> Bank Transfer (net of all charges, plus bank charge)	<ul style="list-style-type: none"> • Bank Name: Hang Seng Bank Limited, UST Branch • Account No.: 024-361-008071-669 (must be stated) • Bank Account Name: The Hong Kong University of Science and Technology • Bank Address: Hang Seng Bank Limited, Room G030, The HKUST, Clearwater Bay, Kowloon, HONG KONG • SWIFT Code: HASE HKHH Please fax a remittance notification with the following details to the secretariat at (+852) 2358 0054 upon completion of bank transfer: <ul style="list-style-type: none"> • Remittance date • Amount and currency • Remitting party • Nature of payment • Name of Conference: ADCHEM2003 		
<input type="checkbox"/> Credit Card (bank charge to be settled by cardholder)	<input type="checkbox"/> VISA (plus net of 2% bank charge)	<input type="checkbox"/> MasterCard (plus net of 2% bank charge)	<input type="checkbox"/> American Express (plus net of 3.9% bank charge)
	Card Number: _____		Expiry Date: _____
Name of cardholder: _____			

Date: _____

Signature: _____
(as appears on credit card)

IMPORTANT INFORMATION

Registration Desk

Registration desk is located at the Academic Concourse of the Hong Kong Science and Technology. Service hours of the registration desk are as below:

11 January 2004 (Sunday) 14:00 - 16:40
12 January 2004 (Monday) 08:00 - 09:00

Symposium Bag

Symposium bag contains a coupon for Preprints (Volume I & II), Symposium CD, Abstract and Program booklets as well as a tourist package from the Hong Kong Tourism Board.

Information Desk

Information desk will be available in the registration area.

Tour and Hotel Reservation Desk

Tour desk is located in the registration area and open from 15:45 - 17:00 on 11 January 2004 (Sunday) and 08:30 - 13:00 on 12 - 14 January 2004.

Exchange Rate

The value of the Hong Kong dollar has been pegged at HK\$7.8 to the US dollar, and consequent rates of exchange to other currencies. However, the market rate exchange to the US dollar may fluctuate marginally.

Weather

In winter (late December to February), it is generally sunny, bright and cool with temperatures ranges from 14°C-20°C (57°F-68°F) with the temperature averaging 17°C (62°F) and humidity near 72%. Warm sweaters and overcoats work best in this season.

Additional Pre-prints

Participants can buy an additional copy of Preprints at the Registration Desk located in the registration area.

Language

The official language of this symposium is English.

TRANSPORTATION TO SYMPOSIUM VENUE

LOCATION MAP THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY



Hints for transportation from airport to HKUST:
For passengers with bulky luggage, taking a taxi to HKUST direct is recommended.