

4WC PROGRAM MONDAY, NOVEMBER 8, 2004

SESSION TITLE: Plenary Session/ Energy and Energy Efficiency I

SESSION CHAIR: R. Schiffman

ROOM NUMBER: Ballroom F

TIME	PAPER NO.	TITLE	AUTHOR
		Plenary and Energy and Energy Efficiency I – Session 95	
8:30-8:45		CONGRESS WELCOME	R.F. Schiffman, Chair
8:45-9:45		Energy Efficiency: The Up To Date Argument for Selling Electrotechnologies	R. Belmans
9:45-10:15		Break	
10:15-10:30		Introduction to Commercialization Sessions	J. W. Cresko, Chair
10:30-11:15		European Regulations and Directives on Energy Efficiency, Renewables and CO2 Trading and Impact on Electricity	V. Di Geniero
11:15-12:00		Commercialization of Microwave Technology at High Temperature	M.W. Sato
1:30		LUNCH	
		Energy and Energy Efficiency II – Session 98	
1:30 - 2:15		Energy Savings in the Chemical Industry	K. Van Reusel
2:15 - 3:00		Choosing RF or MW in Industry	M. Willert-Porada
3:00 - 3:30		Break	
3:30 - 4:15		Dielectric Heating Versus Other Electro-Technologies	C. Debard
4:15 - 4:25		Introduction to Round Table	R. Belmans
4:25 - 5:30		ROUND TABLE: The Impact of Electro Technologies and Their Applications to Energy Efficiency and Manufacturing Economics	V. Di Geniero, M. Machiels, M. Willert-Porada, C. Debard, K. Van Ruesel, M.W. Sato, P. Roberts, R. Belmans, Moderator: J. Cresko.
5:30-7:30pm		Poster Session – Session 99	M. Willert Porada

4WC PROGRAM: MONDAY, NOVEMBER 8, 2004
SESSION TITLE: Microwave Waste Remediation – Session 96
SESSION CHAIR: George Wicks
ROOM NUMBER: Ballroom G

TIME	PAPER NO.	TITLE	AUTHOR
8:00 - 8:15			
8:15 - 9:15			
9:15 - 11:45			
11:45 - 1:00		LUNCH BREAK	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1:00 - 1:30			
1:30 - 2:00	W1	Microwave Remediation of Aqueous Effluent Streams	D. Shorrocks, G. Bond* and D.F. Lee
2:00 - 2:30	W2	Microwave Assisted Processing of Phenol Wastewater on Activated Charcoal	Isabelle Polaert, Lionel Estel*, Alain Ledoux, Christophe Duhauvelle
2:30 - 3:00	W3	New Apparatus For Toxic Waste and Sludge Treatment and For Plasma Processing of Fume by Microwave Power Technique	Massimo Melandri and Marco Contarini and Alberto Brecia*
3:00 - 3:30		BREAK	
3:30 - 4:00	W4	Unpollutant Microwave Incineration of Medical Waste with High Risk of Contamination	Dumitru Nicolae and Daniela Iordache*
4:00 - 4:30	W5	Sealing Waste Tubes by Microwave Welding Tube	O. Aktushev and E. Jerby*
4:30 - 5:00	W6	Carbon Reduction in Flyash Using Microwaves	Chris Dodds*, Ed Lester, Sam Kingman and Steven Bradshaw

4WC PROGRAM: MONDAY, NOVEMBER 8, 2004

SESSION TITLE: Semiconductors and Electronics – Session 97

SESSION CHAIR: John Booske

ROOM NUMBER: 19A

TIME	PAPER NO.	TITLE	AUTHOR
10:30 - 11:00	E1	Study on Microwave Sintering of Multilayer Ceramic Capacitors	Yi Fang*, Hu Peng, Dinesh K. Agrawal, Michael T. Lanagan, Clive A. Randall
11:00 – 11:30	E2	Athermal Photonic Effects on Boron Diffusion and Activation in Silicon During Microwave Rapid Thermal Annealing	C.J. Bonifas, K. Thompson, J.H. Bookse*, R.F. Cooper, M. Alvarex, A. Macconnet
11:30 - 12:00	E3	Millisecond Microwave Annealing of Ultra-Shallow Boron Doped Silicon	Keith Thompson*, J.H. Booske, J. Lohr, L. Ives, Y. Gorelov, K. Kajiwara, M. Alvarez
12:00 - 1:30		LUNCH BREAK	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
1:30 - 2:00	E4	Microwave Processing of New Generation Electronic Devices	K. Annapoorani, B. Vaidhyanathan, J.G.P. Binner and R. Raghavendra
2:00 - 2:30	E5	"Microwave Sintering of Metal Powder Compacts"	Jiping Cheng*, Ruyan Guo, Yunjin Zhang, and Qing-Ming Wang
2:30 - 3:00	E6	Microwave Sintering of Metal Powder Compacts	S. Takayama, G. Link, M. Sato, M. Thumm
3:00 - 3:30		BREAK	
3:30 - 4:00	E7	Ultra-Rapid Millimeter Wave Annealing of Silicon Wafers	Yu V. Bykov, A.G. Ereemev, I.V. Plotnikov, K.I.Rybakov*, V.E. Semenov
4:00 - 5:30	E8	Round Table Discussion: The Changing Role of Microwave and RF in Semiconductor Processing	Murray Kennedy

4WC PROGRAM: TUESDAY, NOVEMBER 9, 2004

SESSION TITLE: CERAMIC PROCESSING

SESSION CHAIR: Ceramics I: Garth Tayler; Ceramics II: Ruth Kiminami; Ceramics III: Huey Hugo

ROOM NUMBER: Ballroom F

TIME	PAPER NO.	TITLE	AUTHOR
8:00 - 8:30	C01	Microwave-Induced Mass Transport Enhancement in Nanoporous Aluminum Oxide Membranes	C.J. Bonifas, A. Marconett, J. Perry, J.H. Booske*, R.F. Cooper
8:30 - 9:00	C02	Novel Processing of Nano-Structured Ceramics Using Microwaves	B. Vaidhyanathan* and J.G.P. Binner
9:00 - 9:30	C03	A Novel Microwave Assisted Process to Synthesize Phosphate Nanowhiskers	S. Jalota, A.C. Tas and S.B. Bhaduri*
9:30 - 10:00		BREAK	
10:00 - 10:30	C04	Microwave Drilling Overview (CERAMICS, GLASS, BASALT)	E. Jerby*, O. Aktushev, V. Dikhtyar, O. Harpaz and P. Livshits
10:30 - 11:00	C05	Reactive Oxide Braze Joining of Ceramic Tubes with a High Power 83GHz Millimeter-Wave Beam System	R.W. Bruce*, R.L. Bruce, D. Lewis III, S.H. Gold, M. Kahn, A.K. Kinkead, A.W. Fliflet and M.A. Imam
11:00 - 11:30	C06	Microwave Brazing, a Novel Method for Joining Ceramics to Metals	Robert Radtke, Joe Geddes
11:30 - 1:30		LUNCH BREAK	XXXXXXXXXXXXXXXXXXXX
1:30 - 2:00	C07	Synergistic Effects of Microwave-LASER Hybridization and Its Application to Ceramics Sintering	R. Peelamedu*, Rustum Roy, A. Badzian and Stephen Copley
2:00 - 2:30	C08	Effect of Addition of ZrO ₂ as Secondary Particulates in Microwave Sintering of Silicon Nitride at 2.45GHz	S. Chockalingam*, D.A. Earl, H.S. Shulman
2:30 - 3:00	C09	Microwave Assisted Reactive Sintering of Zirconium Oxynitrides	M. Panneerselvam* and M. Willert-Porada
3:00 - 3:30		BREAK	
3:30 - 4:00	C10	Microwave Sintering of High Thermal Conductivity AlN	Cheng-Yu Hsieh, Chun-Nan Lin and Shyan-Lung Chung*
4:00 - 4:30	C11	Microwave Autogenous Firing of Heavy Clay Products	Garth V. A. Tayler* and Paul Williams
4:30 - 5:00	C12	Microwave Sintering of Abrasion Resistant Alumina Liner Tiles	G. Swaminathan*, A.B. Datta
5:00 - 5:30	C13	Precision Microgear Burnout and Firing with Microwaves	Shawn M. Allen, Carlos C. Chang, Alfredo M. Morales, Holly S. Shulman*

4WC PROGRAM: TUESDAY, NOVEMBER 9, 2004

SESSION TITLE: DIELECTRICS

SESSION CHAIR: Dielectrics I: Lambert Feher; Dielectrics II: Paolo Veronesi

ROOM NUMBER: Ballroom G

TIME	PAPER NO.	TITLE	AUTHOR
8:00 - 8:30	D01	A GENERALIZED APPROACH FOR MEASURING THE DIELECTRIC PROPERTIES OF LOSSY COMPOSITE MATERIALS	M.J. AKHTAR*, L. Feher, M. Thumm
8:30 - 9:00	D02	A New Approach to the Measurement of Dielectric Properties as a Function of Temperature – Microwave Dielectric Thermal Analysis (MDTA)	S.B. Kumar*, G.B. Parkes, P.A. Barnes, MJN Sibley and G. Bond
9:00 - 9:30	D03	Microwave Calorimetry Coupled with Dielectric Measurements and Near Infrared Spectroscopy: A Powerful Tool for Understanding Microwave Induced Reactions	R.J. Day, A. Nesbitt, C. Nightingale, P. Navabpour, G.F. Fernando, R. Degamber and T. Mann
9:30 - 10:00		BREAK	
10:00 - 10:30	D04	Useful Relationships Between Dielectric Properties and Bulk Density of Powdered and Granular Materials	S. Nelson*
10:30 - 11:00	D05	Temperature Dependence of Dielectric Relaxation of Solvents	Caroline Bonnet, Lionel Estel*, Michael Delmotte, Alain Ledoux, Christophe Duhaufelle
11:00 - 11:30	D06	Express Monitoring of Dielectric Liquids' Permittivity	Yu N. PCHELNIKOV*, Raisa M Dymshits
11:30 - 1:30		LUNCH BREAK	XXXXXXXXXXXXXXXXXXXXXX
1:30-2:00	D07	Measurement and Calculation of the Effective Dielectric Properties for Partially Hollow, Structured Geometries	Jacob George, Gary Squier, Elizabeth Vilenov*
2:00 - 2:30	D08	Studies on the Dielectric Behavior of Polypyrrole and its Semi Interpenetrating Networks with Poly (Vinyl Chloride) in the Microwave Field	Honey John, Rinku Thomas, Rani Joseph, K.T. Mathew*
2:30 - 3:00	D09	In-Situ Observations of Microwave Processing for Ferroic Materials in the H-Field	M. Sato*, R. Roy, P. Ramesh, D. Agrawal
3:00 - 3:30		BREAK	
3:30 - 4:00	D10	High Temperature Microwave Dielectric Properties of Ceramic Nano- and Micropowders	T.E. Cross and G. A. Dimitrakis*
4:00 - 4:30	D11	Dielectric Properties of Timber Samples under Pressure of Several Bars	Nguyen Tran*, Wing K. Tran and Michael Malcman
4:30-5:00	D12	Measuring the Dielectric Properties of Australian Wood Species	A. Taube, G.Daian, Y. Shramkov, M. Daian, A. Birnboim

4WC PROGRAM: TUESDAY, NOVEMBER 9, 2004

SESSION TITLE: POLYMERS

SESSION CHAIR: N. Tran

ROOM NUMBER: 19A

TIME	PAPER NO.	TITLE	AUTHOR
8:00 - 8:30	P01	Microwave Assisted Synthesis, Crosslinking and Processing of Polymeric Materials	D. Bogdal and J. Pielichowski
8:30 - 9:00	P02	Industrial Composite Curing with the 2.45GHz HEPHAISTOS System	L. Feher*, V. Nuss, T. Seitz, M. Thumm
9:00-9:30	P03	Microwave/RF Methods for Detection and Drying of Residual Water in Polymers	Mehrdad Mehdizadeh, Ph.D
9:30 - 10:00		BREAK	
10:00 - 10:30		PAPER WITHDRAWN	
10:30 - 11:00	P05	Microwave Assisted Blow Molding of Polyethylene-Terephthalate (PET) Bottles	Lionel Estel*, Philippe Lebaudy, Alain Ledoux, Carline Bonnet, Michel Delmotte
11:00 - 11:30	P06	A Novel Microwave-Assisted Injection Moulding of Polymers	O Alothman, R.J. Day
11:30 - 1:30		LUNCH BREAK	XXXXXXXXXXXXXXXXXX
1:30 - 2:00	P07	Investigation on the Effect of Microwave Field on the Rheological Behavior of Polyaniline: Polyvinylalcohol Blends	Rinku Mariam Thomas, Honey John, Rani Joseph, K.T. Mathew*
2:00 - 2:30	P08	Microwave and Conventional Mechanical and Thermal Analysis of the Reactions in Epoxy Vinyl Ester Resins	R. Gunaratne*, Richard Day
2:30 - 3:00	P09	Microwave Welding of Thermoplastic Rods without any Conductive Material	N. Tran*, W.K. Tam, Michael Malcman
3:00 - 3:30		BREAK	
3:30 - 4:00	P10	The Dielectric Properties and the Construction of Polymer-Based Micro Fluidic Devices Using Microwaves	A. Yusef*, WK. Tam, Michael Malcman and N. Tran
4:00 - 4:30	P11	Dielectric Properties of Crosslinking Epoxy Resins at 2.45GHz	L. Zong*, S. Zhou, R. Sun, L. Kempel, M. Hawley
4:30 - 5:00	P12	Microwave Techniques for the Preparation of Polymer Foams	Alexander Clarke, A. Nesbitt, R.J. Day, G.L.A. Sims and Z. Wu
5:00 - 5:30	P13	Microwave and Conventional Calorimetry of Unsaturated Polyester and Urethane Acrylate Resins and Their Blends	R.J. Day and S. Pechuay

4WC PROGRAM: TUESDAY, NOVEMBER 9, 2004

SESSION TITLE: CASE HISTORIES // Single Mode

SESSION CHAIR: Doug Parent and Ben Wilson (Case Histories) // Dinesh Agrawal (Single-Mode)

ROOM NUMBER: 19B

TIME	PAPER NO.	TITLE	AUTHOR
8:00 - 8:30	CH1	Microwave Preconditioning to Accelerate Solar Drying of Timber	G. Brodie
8:30 - 9:00	CH2	Investigations and Case Studies of Microwave Heating in the Parquet Industry	T. Kayser*, M. Pauli, W. Sorgel, J. von Hagen, W. Wiesbeck
9:00 - 9:30	CH3	Microwaving Logs for Energy Savings and Improved Paper Properties for Mechanical Pulps	J.H. Klunness, E.G. Horn
9:30 - 10:00		BREAK	
10:00 - 10:30	CH4	New Microwave Technology and Equipment for Wood Modification	G. Torovnikov* and P. Vinden
10:30 - 11:00	CH5	Microwave Drying of Paper Documents	M. Hajek
11:00 - 11:30	CH6	Cooking Vegetables and Ready Meals by Microwaves and Steam with the Valvo-Pack™ Valve	J-P Bernard*
11:30 - 1:30		LUNCH BREAK	XXXXXXXXXXXXXXXXXXXX
1:30 - 2:00	CH7	Drying Macadamia Nuts by Hot Air Combined with Microwaves As Compared to the Conventional Hot Air Process	F.A. Silva and A. Marsoioli, Jr.*
2:00 - 2:30	CH8	Microwave Assisted Vacuum Drying and Endpoint Determination Using Mass Spectroscopy	K. Hettenbach*
2:30 - 3:00		BREAK	
3:00 - 3:30	SM1	Seaweed Processing Using Industrial Single Mode Cavity Microwave Heating	G. Conner, A.J. Easteal, M.A. Farid, R.B.Keam, S.F. Uy*
3:30 - 4:00	SM2	Microwave Synthesis of Aligned Carbon Nanotubes in a Single Mode Cavity	J. Cheng*, D. Agrawal and Y. Zhang
4:00 - 4:30	SM3	Microwave-Induced Magnetic Decrystallization	S.M. Copley*, R. Peelamedu, D. Agrawal and R. Roy
4:30 - 5:00	SM4	H-Field Induced Changes in Ni-Zn Ferrites by Single Mode Microwave Irradiation	R. Peelamedu, D. Agrawal, R. Roy and S. Copley*

4WC PROGRAM: WEDNESDAY, NOVEMBER 10, 2004

SESSION TITLE: CERAMICS // GLASS/MINERALS // Biomaterials-Biomedical

SESSION CHAIRS: Hugo Huey (Ceramics III) // Guido Link (Glass/Minerals) // /DIANE FOLZ (Biomaterials)

ROOM NUMBER: Ballroom F

TIME	PAPER	TITLE	AUTHOR
8:00 - 8:30	C14	Microwaves for Sol-Gel Synthesis of Boron Carbide (B ₄ C)	Manuel Rodriguez, Ubaldo Ortiz, Oxana Kharissova, Juan Aguilar*, Zarel Valdez
8:30 - 9:00	C15	Microwave Synthesis of Lamp Phosphors	Yi Fang*, Dinesh K. Agrawal, James C. Walck, Joan M. Coveleskie, Robert T. McSweeney, Chung-nin Chau
9:00 - 9:30	C16	Factors Effecting the Crystallization of Zeolites Synthesized by Microwave Heating	B.M. Panzarella*, W.C. Conner, G. Thompsett
9:30 - 10:00		BREAK	
10:00 - 10:30	C17	The Effect of Heating Rate, Stirring and Power Delivery on Silicalite Microwave Synthesis	G.A. Thompsett and W.C. Conner
10:30 - 11:00	C18	Microwave Activated Combustion Synthesis of Intermetallics in the Co-Si System	J.R. Jokisaari, S. Bhaduri, and S.B. Bhaduri*
11:00 - 11:30	C-19	Microwave-Induced Combustion Synthesis of Ni-Cr Ferrite Nanopowders	P. Sarubo, Jr, L. Gama and R. Kiminami*
11:30 - 1:30		LUNCH BREAK	XXXXXXXXXXXXXXXXXXXXXXXXXX
1:30 - 2:00	GM1	Latest Developments in Microwave Processing of Mineral Ores	S. Bradshaw, D. Jones, L. Groves, S Kingman*, E. Lester D. Whittles
2:00 - 2:30	GM2	The Influence of Microwaves on the Leaching Kinetics of Sulphide Minerals	M. Al-Harashsheh*, S. Kingman, N. Hankins, C. Somerfield, S. Bowater
2:30 - 3:00	GM3	Glass Matrix Composites with Lead Zirconate Titanate Particles Processed by Microwave Heating	P. Veronesi*, C. Leonelli, V. Cannillo, E.J. Minay, A.R. Boccaccini
3:00 - 3:30	GM4	High Temperature Processing of Powders Using Millimeter-Waves	G. Link ^{*1} , M. Hauser-Fuhlberg ² , M. Janek ² , R. Nüesch ² , S. Takayama ^{1,3} , M. Thumm ^{1,4} , A. Weisenburger ¹
3:30 - 4:00	B1	RF Radiators for Homogenous Heating	Y. Pchelnikov*, R. Dymshits,
4:00 - 4:30	B2	Method for Extracting Arrhenius Parameters from Transient Temperature Experiments	J.A. Pearce*
4:30 - 5:00	B3	Comprehensive Study of Dielectric Properties of Porcine Head and Neck Tissues at Microwave Frequencies	A. Peyman*, S. Holden, S. Watts, R. Perrott, C. Gabriel
5:00 - 5:30	B4	Sterilization by ECR Plasma	S. Helhel, L. Oksuz, O. Cerezci, A. Yousefi

4WC PROGRAM: WEDNESDAY, NOVEMBER 10, 2004

SESSION TITLE: Plasma Processing

SESSION CHAIR: Plasma Processing I: Gary Bond; Plasma Processing II: Jon Binner

ROOM NUMBER: Ballroom G

TIME	PAPER NO.	TITLE	AUTHOR
8:00 - 8:30	PP01	Characteristics of Microwave Plasma	S. Helhel, L. Oksuz
8:30 - 9:00	PP02	Anisotropy and Selectivity Interdependence Using NF ₃ Gas Mixtures	J.A. Barkanic*, R. Jaccodine
9:00 - 9:30	PP03	Applications of High Pressure Plasma Chemistry to the Abatement of Perfluorocompounds from Microelectronics Manufacturing	M. Radoiu*
9:30 - 10:00		BREAK	
10:00 - 10:30	PP04	Microwave Generated Plasma for the Oxidative Decomposition of Organics in High Throughput Applications	G. Bond*, C. Bool, J. Qiao and M. Richardson
10:30 - 11:00	PP05	Microwave Gas-Discharge Ultraviolet Lamp	E.M. Barmhudarov*, I.A. Kossyi, M.A. Misakyan, A.G. Rummyantseva, I.M. Taktakishvii, A.V. Tulupov
11:00 - 11:30	PP06	Microwave Torch, Physics and Plasma Chemical Applications	S.I. Gritsinin, V. Yu Knyazev, V.A. Kop'ev, I.A. Kossyi*
11:30 - 1:30		LUNCH BREAK	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
1:30 - 2:00	PP07	Designing a Ridge Waveguide Cavity Using Simulation Software for Generating Micro-Plasma for Wool Fiber Coating Operations	N. Tran*, W.K. Tam, M. Malcman
2:00 - 2:30	PP08	Results of DBD on Wool and Cotton	S. Korkmax, L. Oksuz, S. Helhel
2:30 - 3:00	PP09	Repetitive Emission of Traveling Fireballs in Microwave Resonator	V. Dikhtyar and E. Jerby*
3:00 - 3:30		BREAK	
3:30 - 4:00	PP10	Efficient Brazing with Microwaves	Devendra Kumar*, S. Kumar, M. Dougherty, K. Cherian, D. Tasch
4:00 - 4:30	PP11	Carburization of Steel Alloys by Atmospheric Microwave Plasma	S. Kumar* D. Kumar, K. Cherian, M. Dougherty, D. Tasch
4:30 - 5:00	PP12	P/M Sintering by Atmospheric Microwave Plasma	K. Cherian*, S. Kumar, D. Kumar, M. Dougherty, D. Tasch
5:00 - 5:30	PP13	Atmospheric Pressure Plasma Microwave Processing	M. Dougherty, S. Kumar, D.Kumar, K. Cherian

4WC PROGRAM: WEDNESDAY, NOVEMBER 10, 2004

SESSION TITLE: MODELING

SESSION CHAIR: Modeling I: K. Rybakov; Modeling II: Sarit Bhaduri

ROOM NUMBER: 19A

TIME	PAPER NO.	TITLE	AUTHOR
8:00 - 8:30	M01	“Selftransflence” Effect of Powerful Microwave Penetration in Water	V. Yu Knyazev, I.A. Kosysi*, N.I. Malykh, E.S. Yampol’skii
8:30 - 9:00	M02	Reducing the Energy Reflection from an Applicator Suitable for Microwave Wood Processing	M. Daian, A. Taube, Y Shramkov
9:00 - 9:30	M03	Numerical Modeling Technique to Predict the Dielectric Properties of Wood	A Taube, G. Daian, M. Daian, Y, Shramkov, A. Birnboim
9:30 - 10:00		BREAK	
10:00-10:30	M04	The Microwave Drill Thermal Runaway Analysis	E. Jerby*, O. Aktushev and V. Dikhtyar
10:30 - 11:00	M05	A Model of Millimeter-Wave Heating of Silicon Powder Compacts	Yu V. Bykov, S.V Egorov, A.G. Ereemeev, I.V. Plotnikov, K.I. Rybakov, V.E. Semenov
11:00 - 11:30	M06	Microwave Heating of Conductive Materials	K.I. Rybakov*, V.E. Semenov
11:30 - 1:30		LUNCH BREAK	XXXXXXXXXXXXXXXXXXXX
1:30 - 2:00	M07	Modeling of Reactive Oxide Braze Joining of Ceramic Tubes with a Millimeter Wave Beam Source	A. W Fillet*, R.W. Bruce, D. Lewis, III, R.L. Bruce and S.H. Gold
2:00 - 2:30	M08	The Application of the Joint Method in Order to Compute the Effects Generated by the Shifting of the Source in a Loaded Cavity	D. Soproni*, T. Maghiar, A. Grava, N. Maghiar, M. Pantea
2:30 - 3:00	M09	Investigations of Non-Thermal Microwave Effects Using Hybrid Conventional/Microwave Heating Calorimetry	J. Binner*, D.M. Price, M. Reading, B. Vaidhyanathan
3:00 - 3:30		BREAK	
3:30 - 4:00	M10	Thermal Validation of the FDTD Method in a Multimode Cavity	J. George* M. Muktoyuk, R. Bergman
4:00 - 4:30	M11	Numerical Analysis of Microwave Heating of Liquid Materials	C.M. Sabliov*
4:30 - 5:00	M12	Simulations and Experiments on the Effects of Millimeter-Wave Heating of Orthotropic and Anisotropic CFRP Composites	C. Hunyar, L. Feher*, M. Thumm

4WC PROGRAM: WEDNESDAY, NOVEMBER 10, 2004

SESSION TITLE: Economics // System Architecture and Design

SESSION CHAIR: B. Schiffman/M. Yonnone (Economics) // John Gerling and Stan Morrow(System Architecture)

ROOM NUMBER: 19B

TIME	PAPER NO.	TITLE	AUTHOR
8:00 - 8:30	EC1	Productivity – “What does it Mean?”	B. Krieger
8:30 - 9:00	EC2	Microwave Equipment Manufacturers Viewpoint of Equipment Economics	M. Yonnone*
9:00-9:30	E3	A Primer on Evaluating the Economics of a MW or RF Processing System	R. Schiffman
9:30-10:00	EC4	Stimulating Microwave and RF Application Innovation	S. Bowater*, D. Clunie, S. Kingman
10:00-10:30		BREAK	
10:30 -11:00	SA1	Health, Regulatory and Equipment Safety Issues Related to Industrial Microwave Applications	J. Gerling*
11:00-11:30	SA2	Tubular Microwave Sintering Furnace with Inert Gas Flushing for Sintering Metallics Samples	G. Swaminathan* and A. Upadhyaya
11:30-1:00		LUNCH BREAK	XXXXXXXXXXXXXXXXXXXX
1:00-1:30	SA3	Two Novel Sources of Variable Frequency Microwave Energy	Y. Pschelnikov*, V.A. Solntsev
1:30-2:00	SA4	Activation System for Electrochemical Automotive Power Devices	F. Bauer, R. Tap, M. Willert-Porada*
2:00-2:30	SA5	Ultra High Temperature Microwave Sintering – Furnace and Process Design	M. Willert-Porada, T. Gerdes, R. Borchert, H.S. Park
2:30-3:00	SA6	New Gyro-Device Systems for Millimeter Wave Processing of Materials	Y. Bykov, G. Denisov, A. Ereemeev, M. Glyavin, V.Kholoptsev, A. Kuffin, S. Samsonov, V. Zapevelov
3:00-3:30		BREAK	
3:30-4:00	SA7	Autowave ^R Laboratory Microwave Packed Bed Reactor (patent pending)	M.L. Tracy, T.A. Treado, D. Parent
4:00 - 4:30	SA8	Control of Continuous Microwave Drying Process of Peanuts Using Remote Temperature Measurement	D. Boldar*, T.H. Sanders, S.A. Hale
4:30- 5:00	SA9	Application Considerations of High Power Microwave Pressure/Vacuum Windows	J. Gerling

4WC PROGRAM: THURSDAY, NOVEMBER 11, 2004

SESSION TITLE: METALS PROCESSING

SESSION CHAIR: Dinesh Agrawal

ROOM NUMBER: Ballroom F

TIME	PAPER NO.	TITLE	AUTHOR
8:00 - 8:30	MT1	An Introduction of Microwave Processing of Metals	E. Ripley, D. Douglas*
8:30 - 9:00	MT2	Current Advances in Microwave Processing of Metals and Related Emerging Technologies	E. Ripley*, D. Douglas
9:00 - 9:30	MT3	Microwave Interactions in The Melting of Metals	H.E. Huey*, M.S. Morrow
9:30 - 10:00		BREAK	
10:00 - 10:30	MT4	Interaction of High Power Microwave Beams with Metal Dielectric Media (Physics and Applications)	G.M. Batanov, N.K. Berezhetskaya, I.A. Kossyi*, A.N. Magunov and V.P Silakov
10:30 - 11:00	MT5	Continuous Production of Nanophase Metals, Metal Oxides and Mixtures Using a Microwave Drive Polyol Process	D.A. Lewis, III*, L.K. Kurihara, R.W. Bruce, R.L. Bruce, A.W. Fliflet and S.H. Gold
11:00 - 11:30			
11:30-1:00		LUNCH BREAK	XXXXXXXXXXXXXXXXXXXX

4WC PROGRAM: THURSDAY, NOVEMBER 11, 2004

SESSION TITLE: ORGANIC CHEMISTRY

SESSION CHAIR: Mayur Lodaya

ROOM NUMBER: Ballroom G

TIME	PAPER .	TITLE	AUTHOR
8:00 - 8:30	OC1	Can Microwave-Assisted Reactions and Processes be Qualified and Validated?	M. Nuchter*, B. Ondruschka, R. Bierman, D. Weiß, R. Beckert
8:30 - 9:00	OC2	Aspects of Propane Oxidation at Perovskite Catalysts in a Multimode Oven	H. Will, P. Scholz*, B. Ondruschka and W. Burckhardt
9:00 - 9:30	OC3	Stereochemical Control in Microwave Stimulated Acylation Reactions	G. Bond*, J. Gardner, A. Taylor
9:30 - 10:00		BREAK	
10:00 - 10:30	OC4	"Greener" Chemical Syntheses Using Microwaves	R. Varma*, J. Yuhong
10:30 - 11:00	OC5	New Flax Yarn Cross-Linked with Citric Acid by Thermal Treatment of By Microwave Irradiation	G. Gastaldi, E. Vismara*, M. Comoli, G. Torri, C. Leonelli, P. Veronesi, G. Rondi, S. Maini

4WC PROGRAM: THURSDAY, NOVEMBER 11, 2004

SESSION TITLE: INORGANIC CHEMISTRY

SESSION CHAIR: Becky Schulz

ROOM NUMBER: 19A

TIME	PAPER	TITLE	AUTHOR
8:00 - 8:30	IC1	Melting and Processing of Silicon by Microwave Heating	T. Gerdes*, H.S. Park, I. Sen, M. Willert-Porada
8:30 - 9:00	IC2	Treatment of Residuary Acids by Microwaves	J. Bernard*
9:00 - 9:30	IC3	Development of NiZnFe ₂ O ₄ with Ultra-Low Dielectric Constant Value Ferrites by Multimode Microwave Sintering	R. Peelamedu, P. Yadoji*, D. Agrawal, R. Roy
9:30 - 10:00	IC4	Evidence for the microwave effect during the hybrid sintering of ZnO	J. Binner, J. Wang and B. Vaidhyanathan
10:00 - 10:30	IC5	Synthesis of Monodispersed Iron Oxide Particles in a Large-Scale Microwave Reactor	J-Y Hwang, S. Shi, Z. Xu, K.W. Peterson
10:30 - 11:00	IC6	Morphology- and Size-Controlled Synthesis of Nanoparticles Driven Under Microwave Irradiation	S. Yanagida and Y. Wada*
11:00 - 11:30	IC7	Acceleration of Microwave Irradiation on the Melting of Fluoride	B. Li*, Z. Huang, J. Hwang, S. Qu, S. Shi, Z. Xu

4WC PROGRAM: POSTER SESSION

SESSION TITLE: POSTER SESSION- Monday 6-7:30pm

SESSION CHAIR: MONIKA WILLERT-PORADA

ROOM NUMBER: Hall 4

TIME	PAPER NO.	TITLE	AUTHOR	MISCELLANEOUS
	PS1	Structural and Microstructural Modifications of Materials by Microwave Field Treatments	R. Peelamedu, R. Roy, D. Agrawal	
	PS2	Redistribution of Fields Inside a Single Mode Cavity During H-Field Heating of Ferrites	D.C. Dube, R. Peelamedu, D. Agrawal and R. Roy	
	PS3	Microwave Sintering of Magnesium Fluoride	Z. Shi, J-Y Hwang, B. Li, Z. Huang	
	PS4	The Suzuki Reaction Revised- Simplification and Scale-up in the Microwave Field	M. Nuchter, B. Ondruschka, D. Enke, M. Hermann	
	PS5	Microwave Crystallization of Lithium Disilicate Glass	M. Mahmoud, D. Folz and C. Suchicital, D. E. Clark	
	PS6	Drying Silica Xerogels Using Microwaves	C.E. Folgar, D.C. Folz and D.E. Clark	
	PS7	Surface Hardening by Combining Cr-Electroplating and Microwave Resonance Plasma Nitriding of Cutting Points of Outsized Saws for Wood Industry	G.G. Demyashev, A.L. Taube	
	PS8	Advances in Design of Microwave Resonance Plasma Source	A.L. Taube, G.M. Demyashev, Y. Shramkov	
	PS9	Synthesis of SiC by the Microwave Assisted Carbothermal Reduction of Sugar Cane Wastes	T.P. Deksnys, R.R. Menezes, P.M. Souto, E. Fagury-Neto, R. Kiminami	
	PS10	Microwave Sintering of ZnO-CuO	R.S. Ferreira, R. Menezes, M.R. Morelli, R. Kiminami	
	PS11	Microwave Sintering of Mullite	P.M. Souto, R. Menezes, R. Kiminami	
	PS12	Study of the Microwave Sintering of Porcelain Bodies	R.R. Menezes, P.M. Souto, E. Fagury-Neto, R. Kiminami	
	PS13	Microwave Combustion Synthesis of Lead Lanthanum Titanate (Pb, La)TiO ₃	C.C. dePaula, R.R. Menezes, J.A. Eiras, D. Garcia, R. Kiminami	
	PS14	Wireless Microwave-Based Moisture Sensors for Hardwood Drying Kilns	W. Moschler*, G. Hanson	
	PS15	Microwave Extraction of Antioxidant Components from Rice Bran	J.M. Assad, W.H. Duvernay, C.M. Sabliov, J.S. Godber, M. Lima	
	PS16	A Review of the Performance and Reliability of The CPI AutoWave	H. Shulman, M. Fall	
	PS17	An Investigation into the Applicability of Microwave Sintering Sn-Doped In ₂ O ₃	L. Sworts, M. L. Fall, D. Edwards, H. Shulman	
	PS18	Impurity Reduction in the Microwave Melting and Casting of Metals	M.S. Morrow, H.E. Huey	
	PS19	Coupled Electromagnetic Thermal and Kinetic	R. Sun, S. Zhou, L. Zong, D. Mandal, L.	

		Modeling for Microwave Processing of Polymers	Kempel, M. Hawley, A. Bernard	
	PS20	“Casting Away Myths” About Microwave Processing of Metals	K. Givens, E. Ripley, Y. Hunt, J. Thomas	
	PS21	Coupled Electromagnetic Thermal and Kinetic Modeling for Microwave Processing of Polymers	R. Sun	
	PS22	Development of NiZnFe ₂ O ₄ with ultra-low dielectric constant value ferrites by multimode microwave sintering	R. Peelamedu	
	PS23	Susceptor Investigation for Microwave Heating Applications	G. Gaustad, M.L. Fall, H. Shulman	
	PS24	Application of microwave irradiation to rapid transformations of organic compounds and macromolecules	Dariusz Bogdal*, Jan Pielichowski, Jaroslaw Gorczyk, Szczepan Bednarz, Michal Pajda, Izabela Stepien, Ewa Wolff, Aleksandra Burczyk	
	PS25	Synthesis and Properties of Poly(styrene-co-butyl acrylate) Particles via Microwave-aided Emulsion Copolymerization	Youngjae Yoo, Geun-Hye Hong, Kil-Yeong Choi, Jae Heung Lee	
	PS26	<i>Microwave Drilling of Glasses</i>	<i>E. Jerby*, O. Aktushev, V. Dikhtyar, O. Harpaz and P. Livshits</i>	<i>Also Ceramic session</i>
	PS27	<i>Microwave Drilling of Basalts</i>	<i>E. Jerby*, O. Aktushev, V. Dikhtyar, O. Harpaz and P. Livshits</i>	<i>Also Ceramic session</i>
	PS28	<i>Localized Heating, Melting, and Drilling of Silicon</i>	<i>E. Jerby*, O. Aktushev, V. Dikhtyar, O. Harpaz and P. Livshits</i>	<i>Also Ceramic session</i>
	PS29	<i>Efficient Brazing with Microwaves</i>	<i>Devendra Kumar*, S. Kumar, M. Dougherty, K. Cherian, D. Tasch</i>	<i>Also Plasma session</i>
	PS30	<i>Carburization of Steel Alloys by Atmospheric Microwave Plasma</i>	<i>S. Kumar* D. Kumar, K. Cherian, M. Dougherty, D. Tasch</i>	<i>Also Plasma session</i>
	PS31	<i>P/M Sintering by Atmospheric Microwave Plasma</i>	<i>K. Cherian*, S. Kumar, D. Kumar, M. Dougherty, D. Tasch</i>	<i>Also Plasma session</i>
	PS32	<i>Atmospheric Pressure Plasma Microwave Processing</i>	<i>M. Dougherty, S. Kumar, D.Kumar, K. Cherian</i>	<i>Also Plasma session</i>