

# DETAILED TECHNICAL PROGRAM

MONDAY 23 SEPTEMBER 2002

0830-0845 Welcome, Opening Remarks

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## M1A: INDUSTRIAL APPLICATIONS I

0900 – 1100

Room: Pyrmont 1

Chairperson: B. Krieger

0900-0930 **Invited: Innovative Microwave Technology for the Timber Industry**  
*Grigori Torgovnikov, P. Viden, University Of Melbourne, AUSTRALIA*

0930-1000 **Invited: A Novel Microwave Oven for Commercial and Industrial Use**  
*Robert F. Schiffmann, R.F.Schiffmann Associates, Inc., USA*

1000-1020 **A Comparison of Microwave Furnaces for Sintering Ceramics**  
*Holly Shulman, Ceralink Inc., USA; W. J. Walker Jr, Alfred University, USA*

1020-1040 **The Commercial Development of Controlled Atmosphere High Temperature Continuous Microwave Sintering Systems**  
*Paul Gigl, Mahlon Dennis, Bridgetech Inc.; Dinesh Agrawal, Jiping Cheng, Rustum Roy, The Pennsylvania State University, USA*

1040-1100 **From Lab Scale to Pilot Scale - a Concept to Develop Microwave Assisted Reactions**  
*Matthias Nuchter, B. Ondruschka, R. Bierbaum, A. Tied, A. Wehrmann, Friedrich-Schiller-University Of Jena, GERMANY*

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## M1B: CHEMISTRY & ORGANIC MATERIALS I

0900 – 1100

Room: Skyline 3

Chairperson: S. Bradshaw

0900-0920 **Microwave Curing of Matrimid 5292A Bismalimide Resin**  
*Richard Day, University of Manchester & UMIST, UNITED KINGDOM; I.Zainol, Advanced Materials Research Centre, MALAYSIA*

0920-0940 **Reactions of Tosylhydrazones Under Microwave Irradiation in Solvent-Free Environment**  
*Cristina Leonelli, Universita di Modena, ITALY*

0940-1000 **Using Microwave Process for Extraction of Ginkgo Flavone Glycosides**  
*Zhengtao Liu, Hong Ni, Chinese Research Academy of Environmental Sciences, CHINA*

- 1000-1020 Fatty Acid Methyl Esters Synthesis From Triglycerides over Heterogeneous Catalysts in Presence of Microwaves**  
*C Mazzocchia, A. Kaddouri, G. Modica, Politecnico Di Milano, R. Nannicini, E.N.E.A., ITALY*
- 1020-1040 Novel Chemical Reactions Induced by Microwave Irradiation**  
*Shozo Yanagida, Osaka University, JAPAN*
- 1040-1100 Titanium (IV) Oxide: From Microwave Flash Synthesis to Thin Film Deposition**  
*Elodie Michel, D. Chaumont, D. Stuerger, Laboratoire De Recherches Sur La Reactivite Des Solides, FRANCE*

## M1C: MICROWAVE & RF PLASMAS

**0900 – 1100**

**Room: Skyline 2**

*Chairperson: C. Charles*

- 0900-0930 Invited: Using High Density Low Pressure rf Plasmas for the Fabrication of Optical Waveguides**

*Christine Charles, The Australian National University, AUSTRALIA*

- 0930-1000 Invited: Recent Development of Planar Microwave Plasmas for Materials Processing**

*Hideo Sugai, Nagoya University, JAPAN*

- 1000-1020 Application of Mirror-Confinement-Type ECR Plasma Sputtering and Microwave Radiation to the Low Temperature Synthesis of Crystallized High-k Material Thin Films**

*Shoji Miyake, T. Matsumoto, A. Niinou, Osaka University/Joining and Welding Research Institute, JAPAN; K. Numata, M. Saito, Kanagawa High-Technology Foundation, JAPAN*

- 1020-1040 Microwave-plasma Assisted Processing of Nanoscaled Supported Metal Oxide Catalysts**

*Hendrick Kosslick, A. Dittmar, D.L Hoang, Institute of Applied Chemistry Berlin-Adlershof e.V.*

**1100-1130 Coffee Break**

## M2A: SYSTEMS & DIAGNOSTICS

**1130 – 1230**

**Room: Pyrmont 1**

*Chairperson: J. Gerling*

- 1130-1150 HEPHAISTOS – Development of a Novel Automated Microwave Processing System for Carbon Reinforced Fibre Plastics (CFRP)**

*Lambert Feher, M. Thumm, Forschungszentrum Karlsruhe, GERMANY*

- 1150-1210 Thermography for Optimizing High Frequency and Microwave Installations**

*Walter Van Loock, Ghent University Belgium, BELGIUM*

**1210-1230 Temperature Measurements During Microwave Processing: A Comparative Study**  
*Bala Vaidhyathan, K. Annapoorani, J.G.P Binner, Loughborough University, UNITED KINGDOM*

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**M2B: INORGANIC MATERIALS I**

**1130 - 1230** **Room: Skyline 3**  
*Chairperson: Y. Carmel*

**1130-1150 Millimeter-wave Sintering Characteristics of Submicron Size Alumina Powders**  
*Yukio Makino, S. Miyake, Osaka University, JAPAN; S. Sano, AIST, JAPAN; B. Kyoh, Kinki University, JAPAN*

**1150-1210 Rapid Fabrication of Aluminium Nitride with High Thermal Conductivity by Millimeter-wave Heating Method**  
*T Yoshioka, Y. Makino, S. Miyake, Osaka University, JAPAN*

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**M2C: SEMICONDUCTORS & ELECTRONICS**

**1130 - 1230** **Room: Skyline 2**  
*Chairperson: M. Willert-Porada*

**1130-1150 Electromagnetic Induction Heating for Ultra Shallow Junction Formation**  
*Keith Thompson, J. H Booske, R. F. Cooper, University of Wisconsin, USA; Y. B Gianchandani, University of Michigan, USA*

**1150-1210 Edge Effect in the Microwave Heating of Conductive Plates**  
*Sergey Egorov, A.G. Ereemeev, I.V. Plotnikov, V.E. Semenov, A.A. Sorokin, N.A. Zharova, Institute Of Applied Physics, Russian Academy Of Sciences, RUSSIA*

**1210-1230 Microwave Processing of Nanocrystalline ZnO Varistors**  
*Bala Vaidhyathan, K. Annapoorani, J.G.P Binner, Loughborough University, UNITED KINGDOM*

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**1230-1400 Lunch Break**

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**M3A: WASTE REMEDIATION**

**1400 - 1530** **Room: Pymont 1**  
*Chairperson: D. Folz*

**1400-1430 Invited: Microwave Waste Remediation: An Update on Current Research and Practices**  
*Rebecca Schulz, Corning Inc, USA*

**1430-1450 Microwave Irradiation of Asbestos Containing Materials**  
*G Marucci, M. Annibali, Centro Ricerche Casaccia, ITALY; G. Ragazzo, ITREC, ITALY; G.C Pellacani, C. Siligardi, P. Veronesi, University of Modena and Reggio Emilia, ITALY*

**1450-1510 Microwave Heated Fluidised Bed Calcination of Waste Containing Ceramic Powders**  
*E. Sizgek, G. D. Sizgek, Australian Nuclear Science and Technology Organisation, V. Vegh, I. W. Turner, Queensland University of Techology, AUSTRALIA*

**1510-1530 Microwave Assisted Regeneration of Soot Filters**  
*Ye Zhang, A. Bliet University Of Amsterdam, NETHERLANDS*

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### **M3B: CHEMISTRY & ORGANIC MATERIALS II**

**1400 - 1530** **Room: Skyline 3**  
*Chairperson: R. Schiffmann*

**1400-1430 Invited: Microwave Catalysis for the Production of Fine Chemicals and Pharmaceuticals**  
*Gary Bond, University Of Central Lancashire, UNITED KINGDOM*

**1430-1450 Efficient Synthesis of Luminescent Metal Complexes by Microwave Irradiation**  
*Takeko Matsumura-Inoue, Y. Yamamoto, N. Yoshikawa, Nara University Of Education, JAPAN*

**1450-1510 Anatase or Rutile: Microwave Kinetic Effect?**  
*Elodie Michel, D. Chaumont, D. Stuerge, Laboratoire De Recherches Sur La Reactivite Des Solides, FRANCE*

**1510-1530 Microwave-Assisted Preparation of TiO<sub>2</sub> Nanocrystals in 1,4-Butanediol or 1,5-Pentanediol**  
*Tetsushi Yamamoto, Y. Wada, H. Yin, S. Yanagida, T. Sakata, Hiroaro Mori, Osaka University, JAPAN*

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### **M3C: DIELECTRIC PROPERTIES**

**1400 – 1530** **Room: Skyline 2**  
*Chairperson: K. Rybakov*

**1400-1430 Invited: Multiscale Dielectric and Thermal Properties of Composites: Modeling and Experiments**  
*Yuval Carmel, A. Birnboim, T. Olorunyolemi, I.K. Lloyd, O.Wilson Jr., University Of Maryland, USA*

**1430-1450 Dielectric Characterization of Composite Ceramic Materials**  
*Nguyen Tran, Swinburne University, AUSTRALIA*

**1450-1510 Volume Fraction- and Particle Size Distribution-Determination of Dispersed Systems by Dielectric Spectroscopy and Principal Component Analysis**  
*Marc Regier, H. Schubert, University Of Karlsruhe, GERMANY*

**1510-1530 Universal Microwave Moisture Sensor**  
*Samir Trabels, S. O. Nelson, Richard B. Russell Agricultural Research Center, USA*

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**1530-1600 Coffee Break**

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**POSTER SESSION**

**M4A: INORGANIC MATERIALS; MODELING & DIELECTRIC PROPERTIES; FOOD, AGRICULTURE & FOREST PRODUCTS**

**1530 – 1730**

**Room: Harbourside, Level  
2**

*Chairperson: R Schulz*

**INORGANIC MATERIALS**

**Study on Feasibility of Applying Microwave Heating to Smelting Reduction**

*Jin Chen, Professor Liu Liu and Jiaqing Zeng, Central Iron And Steel Research Institute, CHINA*

**Microwave Sintering of Integrated Devices**

*K. Annapoorani, B. Vaidhyanathan, J. G. P. Binner, Loughborough University, UNITED KINGDOM; R. Ramesh Littlefuse Ireland Limited Daundalk, IRELAND*

**Enhancement of Cutting Performance by Microwave Treatment**

*Sivanandam Aravindan, Indian Institute of Technology, INDIA*

**Use of Pre-impregnation Techniques for the Fabrication of SiCf/SiC Composites by Microwave Enhanced Chemical Vapour Infiltration**

*David Jaglin, D. Grant, University of Nottingham, UNITED KINGDOM; B. Vaidhayanathan, J. Binner, University of Loughborough, UNITED KINGDOM; C. Prentice, B. Shatwell, Qineti, UNITED KINGDOM*

**Use of Microwave Power in Slip Casting, Drying of Green Clay Wares and Plaster-of-Paris Moulds**

*David Jaglin, J. Binner, University of Loughborough, UNITED KINGDOM; J. Vieira, H.M da Costa Paiva, University of Aveiro, PORTUGAL*

**Effect of Microwaves on Plaster-of-Paris Moulds in a Slip Casting Process of Clay**

*David Jaglin, J. Binner, University of Loughborough, UNITED KINGDOM; J. Vieira, H.M da Costa Paiva, UNITED KINGDOM*

**Experimental Study of the Possibility of Microstructure Control in the Microwave Sintering of Nanostructured Alumina**

*K. Rybakov, S. V Egorov, A. G. Ereemev, A. A Sorokin, Institute Of Applied Physics, Russian Academy Of Sciences, RUSSIA; A. I. Rachkovskii, Russian Nuclear Center, RUSSIA*

**Direct Temperature Distribution Measurement for Inside of Oxide Ceramics Bodies During Microwave Heating**

*Saburo Sano, A. Tsuzuki, A. Gotou, National Institute Of Advanced Industrial Science And Technology, JAPAN; T. Yoshioka, Y. Makino, S. Miyake, Osaka University, JAPAN*

**Investigations of Dielectric Behavior of Materials in the GHz Range During Microwave Processing**

*Dinesh Dube, Indian Institute Of Technology, New Delhi, INDIA  
M.T Lanagan, Hu Peng, P.K. Sharma, Dinesh Agrawal, Pennsylvania State University, USA*

**Absorbed Microwave Energy and Loss Heat Flux of Thermal Insulator for Microwave Sintering at 2.45 GHz**

*Sadastugu Takayama, M. Mizuno, T. Hirai, N. Katou, T. Shimada, Gifu Prefectural Institute, JAPAN; M. Sato, T. Mutoh, T. Shimotuma, K. Ida, T. Inoue, K. Esaki, O. Motojima, M. Fujiwara, National Institute for Fusion Science, JAPAN*

**MODELING & DIELECTRIC PROPERTIES**

**Multithread FDTD Modelling of Segmented Microwave Heating Systems**

*Malgorzata Celuch-Marcysiak, J. Rudnicki, M. Sypniewski, Warsaw University Of Technology, POLAND*

**Analytical Modeling of Temperature Dependent Properties of Dielectric Materials in the Microwave Range**

*Vyacheslav V. Komarov, Saratov State Technical University, RUSSIA*

**About Trapping of Modes**

*J-L. Mousoon, Elodie Michel, C. Lohr, P.Pribetich, D. Stuerga, Laboratoire De Recherches Sur La Reactivite Des Solides, FRANCE*

**Dielectric Characterization of Composite Ceramic Materials**

*Nguyen Tran, RMIT, AUSTRALIA*

**Efficient Optimization of S-Parameters of Systems and Components in Microwave Heating**

*V. A. Mechenova, Vadim Yakovlev, Worcester Polytechnic Institute, USA*

**One Dimensional Numerical Simulation of Microwave Enhanced Chemical Vapour Infiltration**

*Chandradeo Bokhoree, Loughborough University Microwave Processing Group, UNITED KINGDOM*

**FOOD, AGRICULTURE AND FOREST PRODUCTS**

**Relieving Growth Stress in Plantation Timber Using Microwaves in Laboratory Experiments**

*John T Gillies, Peter Hutchings, Timberfio Pty Ltd, AUSTRALIA; Professor Nguyen Tran, Swinburne University of Technology, AUSTRALIA*

**Effect of Microwave Treatment on Radiata Pine Microstructure**

*Nasko Terziev, G. Daniel, Swedish University Of Agricultural Sciences, SWEDEN;  
G. Torgovnikov, P. Vinden, The University of Melbourne, AUSTRALIA*

**Hybrid (Radio Frequency + Hot Air) Drying System for Finish Drying of Vegetables**

*Rajesh Harsh, SAMEER, IIT Campus, INDIA*

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**M5A: FEATURE SESSION**

**1730 – 1800**

**Room: Pymont 1**

*Chairperson: J. Gerling*

**Advancements in Mw & RF Power Applications in China**

*Ji Tian-Ren, University of Electronic Science & Technology, CHINA*

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## TUESDAY 24 SEPTEMBER 2002

Chairperson: R. Schiffmann

0830–0930 **Plenary: Applications of Microwaves in Medicine** Room: Pyrmont 1  
*M. Stuchly, University of Victoria, CANADA*

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0930-1000 Coffee Break

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### T1A: CHEMISTRY & ORGANIC MATERIALS III

1000 – 1200 Room: Pyrmont 1

Chairperson: C. Leonelli

1000-1020 **Rapid and Size-controlled Preparation of Highly Concentrated Silver Nanoparticle Colloids under Microwave Irradiation**  
*Hengbo Yin, Y. Wada, T. Kitamura, T. Yamamoto, S. Yanagida, Osaka University, JAPAN*

1020-1040 **A New Method of Chemical Synthesis of Laurydone® Assisted by Microwave**  
*Jean-Paul Bernard, Sairem, FRANCE*

1040-1100 **Microwave-Assisted Catalytic Hydrogenation of Chlorinated Aromatics for Complete Dechlorination**  
*Yuji Wada, H. Yin, T. Kitamura, S. Yanagida, Osaka University, JAPAN*

1100-1120 **Using Dielectric Properties at 2450 and 915 MHz to Study Chemical Reaction**  
*Xiangjun Liao, G. S. V. Raghavan, V.A. Yaylayan, Macdonald Campus Of McGill University, CANADA*

1120-1140 **Microwave-Assisted Ru)4-Catalysed Oxidation of 4-Chlorophenol**  
*C. J. Crawford, R.W. Kazino, P. Wormell, University of Western Sydney, AUSTRALIA*

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### T1B: INORGANIC MATERIALS II

1000 – 1200 Room: Skyline 3

Chairperson: J.Binner

1010-1040 **Invited: Microwave Assisted Comminution of Ores at Economically Viable Energy Inputs**  
*Steven Bradshaw, K. Jackson, S. Kingman, N. Rowson and R. Greenwood, University of Stellenbosch, SOUTH AFRICA*

1040-1100 **Densification Mechanisms of SiCf/SiC Composites by Microwave Enhanced Chemical Vapour Infiltration**  
*David Jaglin, UNITED KINGDOM*

- 1100-1120 Direct Microwave Coupling to Metals At Elevated Temperatures**  
*Edward Ripley, Y-12 National Security Complex, USA*
- 1120-1140 Experimental Investigation on Microwave Drying for Sodium-based Composite Bentonite**  
*Jin Chen, Liu Liu Jiaqing, Central Iron And Steel Research Institute, CHINA*
- 1140-1200 In situ Diffraction Studies of Single Crystals and Powders During Microwave Irradiation**  
*Andrew Harrison, The University of Edinburgh, UNITED KINGDOM; Richard Ibberson, Graeme Robb, Gavin Whittaker, Centre For Magnetic Resonance, AUSTRALIA; Chick Wilson, Douglas Youngson, UNITED KINGDOM*
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## **T1C: BIOMEDICAL APPLICATIONS**

**1000-1200**

**Room: Skyline 2**

*Chairperson: M. Stuchly*

**1000-1030 Invited: Continuous and Pulsed Medical Microwave Devices**

*Fred Sterzer, MMTc, Inc., USA*

**1030-1100 Invited: FDTD Method for Modelling the Electromagnetic Field Effect on the Human Body in MRI**

*Huawei Zhao, University Of Queensland, AUSTRALIA*

**1100-1130 Invited: Computational and Experimental Investigations of Microwave Breast Cancer Detection via Space-Time Beamforming**

*Xu Li, E.J. Bond, S. Davies, M. Choi, P. Gustafson, S.C. Hagness, B.D. Van Veen, D. van der Weide, Department of Electrical and Computer Engineering, University of Wisconsin, USA*

**1130-1200 Invited: Image Formation Algorithms With Automatic Skin Detection For Confocal Microwave Imaging**

*Elise C. Fear, M. Okoniewski, University of Calgary, CANADA*

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**1200-1330 Lunch Break**

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**OPEN FORUM**

**Room: Pyrmont 1**

*Chairperson: D. Clark*

**1330-1430 Are We Really Bridging Science, Technology and Applications?**

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## T2A: INDUSTRIAL APPLICATIONS II

1430 - 1600

Room: Pyrmont 1

Chairperson: N. Tran

1430-1500 **Invited: An Overview of Industrial Applications for Microwave and Radio Frequency Energies**

*Michael V. Vasilik, Electrotechnology Applications Center, USA*

1500-1520 **The Use of Microwave Energy for the Firing of Heavy Clay Products**

*Garth Tayler, Acme Brick Company, USA*

1520-1540 **Advances in Microwave Processing of Concrete**

*Swee Mak, CSIRO Manufacturing & Infrastructure Technology, Nguyen Tran, Swinburne University of Technology, AUSTRALIA*

1540-1600 **Microwave and RF Drying of Hardwood Timber**

*Joseph Lieberfreund, Byford Timber, AUSTRALIA*

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## T2B: INORGANIC MATERIALS III

1430 - 1600

Room: Skyline 3

Chairperson: G. Whittaker

1440-1500 **The Effect of Reaction Parameters on Microwave-Induced Combustion Synthesis of Al<sub>2</sub>O<sub>3</sub>-TiC Powders**

*Duangduen Atong, National Metal And Materials Technology Center, THAILAND*

1500-1520 **Microwave Sintering of W-Ni-Cu Alloys**

*Jiping Cheng, Dinesh Agrawal and Rustum Roy, Pennsylvania State University, USA*

1520-1540 **Microwave Assisted Recovery of Platinum**

*Thorsten Gerdes, University Of Bayreuth, GERMANY*

1540-1600 **Potential Application of Microwaves in Steelmaking**

*Xiaodi Huang, J.Y. Hwang, S. Shi, R.C. Greenland, T. Xu, A.M. Hein, Michigan Technological University, USA*

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## T2C: MODELING I

1430 - 1600

Room: Skyline 2

Chairperson: I. Turner

1430-1500 **Invited: Microwave Heating of Silicon Wafers in Cylindrical TM Cavities: A Mathematical Model**

*Gregory Kriegsmann, New Jersey Inst. of Technology, USA*

1500-1520 **Modeling the Dielectric Properties of Fruit, Vegetables and Meat**

*Sheryl Barringer, O. Sipahioglu, The Ohio State University, USA*

**1520-1540 Integral Equations for Numerical Modeling of Electromagnetic Fields in Microwave Systems Including Linear Bianisotropic Materials**

*Piergiorgio Uslenghi, University Of Illinois At Chicago, USA*

**1540-1600 FDTD Modeling of Electromagnetic Power Dissipation in Rotated Objects**

*Pawel Kopyt, Malgorzata Celuch-Marcysiak, W.K.Gwarek, Warsaw University Of Technology, POLAND*

**POSTER SESSION**

**T3A: INDUSTRIAL APPLICATIONS; CHEMISTRY & ORGANIC MATERIALS; MICROWAVE & RF PLASMAS; SYSTEMS & DIAGNOSTICS; SEMICONDUCTORS AND ELECTRONICS**

**1600 - 1800**

**Room: Harbourside, Level 2**

*Chairperson: N. Tran*

**INDUSTRIAL APPLICATIONS**

**Method of Induction Curing Conductive Carbon Fiber Composites with Radio Frequency Energy**

*Joseph Cresko, The Electrotechnology Applications Center, USA; P.Roberts, ETA Prime Co., USA*

**CHEMISTRY AND ORGANIC MATERIALS**

**Microwave-assisted Kabachnik-Fields Reaction in Ionic Liquids**

*Jae Kyun Lee, C.E. Song, S-g. Lee, Korea Institute Of Science And Technology, SOUTH KOREA; D.-C. Kim. The University of Seoul, KOREA*

**MICROWAVE AND RF PLASMAS**

**VOC Control: Current Technology and Potential Application of Non-Thermal Plasmas**

*Eleanor Binner, Carlos A. Destefani, Elias Siores, Industrial Research Institute of Swinburne, AUSTRALIA*

**Synthesis of Composite Powders and Coating of Fibres by Combined CVD-PECVD in a Microwave Heated Fluidised Bed Reactor**

*Roland Tap, M. Willert-Porada, University Of Bayreuth, GERMANY*

**Novel Microwave Resonance Plasma Technology for Development of Nano-Structured Biomaterials**

*Alex Taube, G.M Demyashev, E. Siores, Swinburne University Of Technology, AUSTRALIA*

**SEMICONDUCTORS AND ELECTRONICS**

**Microwave and RF Processing of Silicon**

*Keith Thompson, J. H. Booske, R. F. Cooper, University of Wisconsin, USA; Y. B. Gianchandani, University of Michigan, USA*

## WEDNESDAY 25 SEPTEMBER 2002

Chairperson: J. Booske

**0830-0930** **Plenary: Review of Health Effects of RF and Microwave** Room: Pyrmont 1  
*Camelia Gabriel, Microwave Consultants Ltd, UNITED KINGDOM*

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### W1A: SOURCES OF EXPOSURE AND DOSIMETRY

**0945 - 1100** Room: Pyrmont 1  
Chairperson: C. Gabriel

**0945-1015** **Radio Frequency Sources Across the Spectrum, Natural and Man Made**  
*Michael Bangay, ARPANSA, AUSTRALIA*

**1015-1045** **Occupational Health and Safety and RF/MW Work**  
*Bruce Hocking, Specialist in Occupational Medicine, AUSTRALIA*

**1045-1100** **The Numerical Evaluation of SAR Distribution and Temperature Change around  
Metallic Implants in RF Exposed Workers**  
*Robert McIntosh, R. J. McKenzie, Telstra Research Laboratories, AUSTRALIA;*  
*V. Anderson, RMIT University, AUSTRALIA*

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**1100-1130** **Coffee Break**

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### W2A: RESEARCH METHODOLOGIES I

**1130 - 1245** Room: Pyrmont 1  
Chairperson: C. Gabriel

**1130-1200** **Epidemiological Studies of Exposure to Radiofrequencies and Human Cancer**  
*Mark Elwood, National Cancer Control Initiative, AUSTRALIA*

**1200-1230** **Recent Results with Animal Experiments**  
*Tammy Utteridge, Royal Adelaide Hospital, AUSTRALIA*

**1230-1245** **Modified TEM Cell Design Exposure System for In Vitro Exposure of Cultured  
Human Astrocytes to 900 MHz GSM Mobile Phone type Signals**  
*Ray McKenzie, R. L. McIntosh, S. Iskra, A. Carratelli, Telstra Research Laboratories,  
AUSTRALIA*

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**1245-1400** **Lunch Break**

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**W3A: RESEARCH METHODOLOGIES II****1400 - 1530****Room: Pyrmont 1***Chairperson: C. Gabriel***1400-1430 Human Volunteer Studie in Relation to RF Exposure***Andrew Wood, Swinburne University Of Technology, AUSTRALIA***1430-1500 Low Level Effects and Mechanisms of Interaction***Vitas Anderson, EME Australia Pty Ltd, AUSTRALIA***1500-1530 Are Some People More Sensitive than Others to EME? How to Approach the Question of Hypersensitivity?***Ray McKenzie, Telstra Research Laboratories, AUSTRALIA*

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**1530-1600 Coffee Break**

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**W4A: CONSENSUS OF SCIENTIFIC OPINION AND STANDARDS****1600 - 1800****Room: Pyrmont 1***Chairperson: C. Gabriel***1600-1630 Exposure Standard and Implementation***Alex Gosman, Ericsson Australia, AUSTRALIA***1630-1700 Community EME Exposure Assessments Using Telstra's RF Map***Mike Wood, Telstra Corporation, AUSTRALIA***1700-1730 Application of the Precautionary Approach to Deployment of Radio Communications Infrastructure***Brent Gerstle, Optus, AUSTRALIA***1730-1800 Harmonisation of RF Standards: An Achievable Goal?***Colin Roy, ARPANSA, AUSTRALIA*

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**TH1A: MODELLING II**

**0830 - 1000**

**Room: Pyrmont 1**

*Chairperson: W. Gwarek*

**0830-0900 Invited: Mathematical Modeling of Microwave Heating in Waveguides and Cavities: Semi-analytical Solutions**

*Timothy Marchant, University of Wollongong, AUSTRALIA*

**0900-0920 Computational Analysis of an Irregular Slotted Waveguide as Radiating Element**

*V. V. Komarov, Saratov State Technical University, RUSSIA; Vadim Yakovlev, Worcester Polytechnic Institute, USA*

**0920-0940 A Comparison of Three-dimensional Semi-analytical and Numerical Techniques for the Microwave Heating of a Lossy Material in a Waveguide**

*Bin Liu, University Of Wollongong, AUSTRALIA; I. Turner, V. Vegh, Queensland University of Technology, AUSTRALIA*

**0940-1000 Microwave Breakdown in Gas and Liquid Droplets at High Pressures**

*Nguyen Tran, Elias Siores, Swinburne University of Technology, AUSTRALIA*

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**TH1B: SYSTEMS & DIAGNOSTICS II**

**0830 - 1000**

**Room: Skyline 3**

*Chairperson: S. Miyake*

**0830-0900 Invited: Recent Development of Microwave Kilns for Industries in Japan**

*Motoyasu Sato, T. Mutoh, T. Shimotuma, K. Ida, T. Inoue, K. Esaki, O. Motojima, M. Fujiwara, National Institute for Fusion Science, JAPAN; S. Takayama, M. Mizuno, S. Obata, T. Shimada, K. Ito, Gifu Prefectural Institute for Ceramics Research and Technology, JAPAN*

**0900-0920 A Technical Review of Equipment and Methods for Waveguide Power Measurement**

*John F Gerling, Gerling Applied Engineering, Inc., USA*

**0920-0940 Dilatometer System with Hybrid Heating Technique for Detailed Investigations on Sintering of Ceramics**

*Guido Link, M. Thumm, Forschungszentrum Karlsruhe GmbH, GERMANY*

**0940-1000 Determination of Realistic Microwave Absorptivity of Cavity Walls**

*A. W. Fliflet, S. H. Gold, Naval Research Laboratory, USA; K. Rybakov, N. A. Zharova, V. E. Semenov, Russian Academy of Sciences, RUSSIA*

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**TH1C: INORGANIC MATERIALS IV****0830 - 1000****Room: Skyline 2***Chairperson: D. Atong*

**0830-0900** **Invited: Microwave Processing of Inorganic Materials-a Unified Approach**  
*Monika Willert-Porada, Thorsten Gerdes, Jens Gorbe-Berg University Of Bayreuth, GERMANY*

**0900-0920** **Microwave Intensity-Dependent Mass Transport Enhancement In Nanostructured Alumina Membranes**  
*S. V. Egorov, A. G. Ereemeev, K. I. Rybakov, V. E. Semenov, A. A. Sorokin, Institute Of Applied Physics, Russian Academy Of Sciences, RUSSIA; S. A. Gusev, Institute of Physics of Microstructures, Russian Academy of Sciences, RUSSIA*

**0920-0940** **Microwave Sintering of A Combustion Synthesized AlN Powder**  
*Cheng-Yu Hsieh, Chun-Nan Lin, Shyan Lung Chung, National Cheng Kung University, TAIWAN; Jiping Cheng, Dinesh Agrawal, Pennsylvania State University, USA*

**0940-1000** **Microwave Sintering of Large-Sized NTC Thermistor Ceramics**  
*Aimin Chang, Jianwen Zhuang and Wen Yang, Xinjiang Institute Of Physics, P.R. CHINA*

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**1000-1030** **Coffee Break**

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**TH2A: CHEMISTRY & ORGANIC MATERIALS IV****1030 - 1200****Room: Pyrmont 1***Chairperson: G. Bond*

**1040-1100** **Synthesis of Nano sized Solid Catalysts assisted by Microwaves Irradiation**  
*Akim Kaddouri, C. Mazzocchia, G. Modica, POLITECNICO DI MILANO, ITALY*

**1100-1120** **Effect of Microwave Processing upon the Chemical Reaction Path in Amine and Acid Cured Epoxy Resins**  
*R.J Day, A. Nesbitt, D.R Suckly, Y. Katkura, UMIST, F. Heatley, University of Manchester, M. Wallace, D. Attwood, British Airspace Operations, UNITED KINGDOM*

**1120-1140** **Microwave Assisted Synthesis of Hybrid Organic-Inorganic Membranes for Fuel Cell Applications**  
*Felix Bauer, M. Willert-Porada, University Of Bayreuth, GERMANY*

**1140-1200** **Microwave Bonding of Thermoplastic Adherends**  
*A. Buchman, H. Birnholtz, RAFAEL, ISRAEL*

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**TH2B: INDUSTRIAL APPLICATIONS III****1030 - 1200****Room: Skyline 3***Chairperson: W. Van Loock***1030-1100 Invited: Successful Microwave Processing Applications in Industry***Nguyen Tran, Swinburne University of Technology, AUSTRALIA***1100-1120 Designing Industrial Microwave and RF Heating Systems for Safe Operation***Robert F. Schiffmann, R.F.Schiffmann Associates, Inc., USA***1120-1140 Processing of Palm Fruits Using Microwaves***Mee Chin Chow and A.N Ma, Malaysian Palm Oil Board, MALAYSIA***1140-1200 Innovative Application of Dielectric Heating Technologies to Concurrently Reduce Energy Usage and Emissions in Polymer Manufacturing Processes***Joseph Cresko, The Electrotechnology Applications Center, USA and T.L Allen, Occidental Chemical Corporation, USA*

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**TH2C: FOOD, AGRICULTURE, AND FOREST PRODUCTS****1030 - 1200****Room: Skyline 2***Chairperson: L. Nadj***1040-1100 Microwave Technology for Heating Large Diameter Logs for Sapstain Treatment***Peter Carter, Carter Holt Harvey Limited, NEW ZEALAND; Professor Nguyen Tran, Swinburne University of Technology, AUSTRALIA***1100-1120 Microwave Energy: a Valuable Tool for Destruction of Exotic Wood-boring Pests that Hitchhike Across Continents***Mary Flemming, K.Hoover, Y. Fang, D. Whitmore, D. Agrawal, R. Roy, Pennsylvania State University, USA; J. Shield, University of Nebraska, USA; L. Bauer, D. Miller, USDA, USA***1120-1140 Microwave and Radio-Frequency Power Applications in Agriculture***Stuart Nelson, US Department Of Agriculture, ARS, USA; R. B. Russell, Agricultural Research Centre, USA*

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**1200-1215 CONGRESS CLOSING****Room: Pyrmont 1****1230-1700 ANSTO Technical Tour**

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