August 4, 2008

Lobby (Entrance Hall)

10:30 - Registration
10:30 - Exhibition
19:00 - 21:30 Welcome Drink

Room C

11:00 - 17:15 Short Courses

Short Course I 11:00 - 12:00
“Microwave Principles for Microwave Applications I (Part 2)”, Yoshio Nikawa, *Kokushikan University, Japan* (in Japanese)

12:00 - 13:00 Lunch

Short Course II 13:00 - 14:00

Short Course III 14:00 - 15:00
“Application of Microwave Heating to Environmental Technology and Materials Processing”, Noboru Yoshikawa, *Tohoku University, Japan* (in Japanese)

15:00 - 15:15 Coffee break

Short Course IV 15:15 - 16:15
“Terahertz Wave Applications”, Kodo Kawase, *Nagoya University, Japan* (in Japanese)

Short Course V 16:15 - 17:15
“Novel Extraction Technologies Based on Microwaves”, J. R. Jocelyn Paré, *Environment Canada, Canada* (in English with Japanese interpreting)
August 5, 2008

Lobby (Entrance Hall)

8:00 -  Registration
9:00 -  Exhibition
16:20 - 17:30 Poster Side Discussion (even number posters)

Room A

8:30 -  9:00 Opening Ceremony
Chair: Yoshio Nikawa, JEMEA, Kokushikan University
Greetings by
Dr. Yukiko Kada, Governor of Shiga Prefecture, Japan
Professor Shozo Yanagida, JEMEA, Osaka University, Japan
Professor Elias De los Reyes, AMPERE, Universidad Politecnica de Valencia, Spain
Mr. Bernard Krieger, MWG, Cober Electronics Inc., USA
Ms. Kimberly D. Thies, IMPI, USA

9:20 - 12:20 Plenary Session by MWG & IMPI
Session Title: "A Global Perspective on Microwave Technology in the 21st Century"
Organizer: Bernard Krieger, Cober Electronics Inc., USA
Session Chairs: David Clark, Virginia Tech. University, USA
Robert F. Schiffmann, R.F. Schiffmann Associates, Inc., USA

Keynote Speakers and Talk Outlines

K1-1MI  Keynote
"The Business of Industrial Microwave Technology in the 21st Century"
Bernard Krieger, Cober Electronics Inc., USA
As the President of the Microwave Working Group, whose mission is "to bridge science and engineering to applications"; an initiator of the GCMEA Conference; and a founder and CEO of Cober Electronics; and a businessman, Mr. Krieger discusses his unique perspective on the opportunities for microwave technology in the 21st century.

K1-2MI  Keynote
Motoyasu Sato, National Institute for Fusion Science, Japan
Chair of the organizing Committee of GCMEA 2008: High Temperature Microwave Applications: will present the microwave processing by the principle of microwave field coupling and will explain the future industries by the application of microwave.

K1-3MI  Keynote
"Microwave and Combined Heating of Materials - Thermodynamic and Other Fundamentals Behind the Technology"
Monika Willert-Porada, University of Bayreuth, Germany
Recent progress in microwave assisted hybrid heating: Examples of different hybrid heating systems and processes are described, which enable full exploitation of the benefits of volumetric or selective heating by microwave radiation.

K1-4MI  Keynote
Rajender Singh Varma, United States Environmental Protection Agency, USA
Here is great potential for microwave chemistry in the 21st century. Synthesis of such materials will be exemplified using benign reagents and
environmentally-friendly reaction media.

K1-5MI  Keynote
“US Development of Single Mode 915MHz Microwave Sterilization Technology for Packaged Foods”
Juming Tang, Washington State University, USA
President of International Microwave Power Institute: US Development of Single Mode 915 MHz Microwave Sterilization Technology for Packaged Foods: he will provide an overview of a university, government and industrial joint effort in advancing novel thermal processing technologies for military and civilian foods in 21st Century.

Chair: Cristina Leonelli, University of Modena and Reggio Emilia, Italy

O1-01  (A-01: August 5, 13:20 - 13:40)
“Microwave-Assisted Synthesis of Nanomaterials and Nanocomposites”, Mallikarjuna N. Nadagouda, Rajender Singh Varma, United States Environmental Protection Agency, USA

O1-06  (A-02: August 5, 13:40 - 14:00)
“Microwave-assisted Synthesis of Monodispersed Nickel Nanoparticles Using Complex of Nickel Formate with Long-Chain Amine Ligands”, Tomohisa Yamauchi¹, Yasunori Tsukahara¹, Tetsuo Sakamoto¹, Takumi Kono¹, Makoto Yasuda¹, Akio Baba¹, Yuji Wada³, 1) Osaka University, Japan, 2) Nippon Steel Chemical Co., Ltd, Japan, 3) Tokyo Institute of Technology, Japan

O1-03  (A-03: August 5, 14:00 - 14:20)
“Morphology-Controlled Growth of ZnO Nanostructures Using Microwave Irradiation”, Seungho Cho, Seung-Ho Jung, Kun-Hong Lee, Pohang University of Science and Technology, Korea

O1-05  (A-04: August 5, 14:20 - 14:40)
“Microwave Assisted Gel-Combustion Synthesis of Nanocrystalline α-Alumina”, V. Sridhar¹, B. S. Gowrishankar², L. N. Satapathy³, 1) New Horizon College of Engineering, India, 2) Siddaganga Institute of Technology, India, 3) Ceramic Technological Institute, India

15:00 – 16:20  Chemical Synthesis [2]  nano-materials
Chair: Hideko Koshima, Ehime University, Japan

O1-04  (A-05: August 5, 15:00 - 15:20)
“Electrical Conductivity of Microwave Heated Polyaniline Nanotubes and Possible Mechanism of Microwave Absorption by Materials”, Takahiro Murai, Ryo Fukasawa, Tohru Muraoka, Hiroyuki Takauchi, Yasuo Gotoh, Tokihiro Takizawa, Takehiro Matsuse, Shinshu University, Japan

O1-02  (A-06: August 5, 15:20 - 15:40)
“Development of Facile Synthetic Methods of Carbon Nanotubes and Nanocapsules by Using a Domestic Microwave Oven”, Kazuchika Ohta, Yusaku Takagaki, Masahiro Shimizu, Tokihiro Takizawa, Takehiro Matsuse, Shinshu University, Japan

O1-07  (A-07: August 5, 15:40 - 16:00)
“Microwave Special Effect ‘Nonequilibrium Local Heating’ - Its Evidence in the Heterogeneous System by in situ Raman Scattering Measurements and Application for Chemical Reaction of Nanomaterials”, Yasunori Tsukahara¹, Tomohisa Yamauchi¹, Ayano Higashi¹, Tadashi Kawamoto¹, Yuji Wada², 1) Osaka University, Japan, 2) Tokyo Tec., Japan
“Homogeneous Crystal Growth in the Microwave-Assisted Hydrothermal Synthesis of Inorganic Compounds”, Antonino Rizzuti1), Anna Corradi 1), Cristina Leonelli 1), Tadeusz Chudoba2), Tomasz Strachowski3), Agnieszka Opalinska3), Witold Łojkowski2), 1) University of Modena and Reggio Emilia, Italy, 2) Institute of High Pressure Research, Polish Academy of Science, Poland

Room B


Chair: Noboru Yoshikawa, Tohoku University, Japan

O2-01 (B-01: August 5, 13:20 - 13:40)
“Microwave Assisted Sintering of Nanostructured YSZ Ceramics”, Jon Binner, Bala Vaidhyanathan, Anish Paul, Loughborough University, UK

O2-02 (B-02: August 5, 13:40 - 14:00)
“Decorations of Multi Walled Carbon Nano Tubes with Iron Oxide Nano Particles Synthesized by Power Controlled Microwave Heating”, Ryō Fukasawa, Takahiro Murai, Hiroki Taniguchi, Tokihiro Takizawa, Masanori Miyashita, Shogo Mori, Takehiro Matsuse, Shinshu University, Japan

O2-03 (B-03: August 5, 14:00 - 14:20)
“Synthesis of Visible-Light-Active TiO2 Photocatalyst by Microwave Carbon-Modification”, Taro Sonobe, Jaturong Jitputti, Kan Hachiya, Tomohiko Mitani, Naoki Shinohama, Susumu Yoshikawa, Kyoto University, Japan

O2-04 (B-04: August 5, 14:20 - 14:40)
“Rapid Alloy Formation of Silicon with Germanium in Microwave Field Using Single Mode Cavity”, Dinesh Agrawal1), Dinesh Dube2), Fu Ming3), Jiping Cheng1), Rustum Roy1), 1) Penn State University, USA, 2) Indian Institute of Technology, India, 3) Huazhong University of Science & Technology, China

15:00 – 16:20 Materials Processing [2] ceramics

Chair: Yukio Makino, Osaka University, Japan

O2-05 (B-05: August 5, 15:00 - 15:20)
“Numerical Study of Microwave Heating of Highly Conducting Particles Arranged in a Regular Lattice”, Maxim Ignatenko1), Motoharu Suzuki2), Motohiko Tanaka3), Masashi Yamashiro3), Motoyasu Sato1), 1) National Institute for Fusion Science, Japan, 2) Takasago Industry Co., Japan, 3) Nihon University, Japan

O2-06 (B-06: August 5, 15:20 - 15:40)

O2-07 (B-07: August 5, 15:40 - 16:00)
“Near Net Sintering of Zero Expansion-Pore Free Ceramics by Microwave”, Motoyasu Sato1), Ryuichi Akiyama1), Sadatsugu Takayama1), Akihiro Matsubara1), Masanori Ie2), Hiroshi Akiyama2), Hiroyuki Mastro3), Mabito Iguchi3), 1) National Institute for Fusion Science, Japan, 2) National Astronomical Observatory Japan, Japan, 3) Nippon Ceratec Co. Ltd, Japan

O2-08 (B-08: August 5, 16:00 - 16:20)
“Microwave Assisted Drying of High Voltage Electrical Ceramic Components”, L N Satapathy1), Sushil Chandra2), S
This workshop will be held with short presentations and panel discussion after the Keynote Lecture by Professor Agrawal.

WSI-K1  Keynote (18:05 - 18:15)
“Full Sintering of Powder-Metal Bodies in a Microwave Field”, Dinesh Agrawal, Pennsylvania State University, USA

Presenters and Panelists: Each panelist will present topics of interest for five minutes.

First half: Theory & Mechanism, Chair: Noboru Yoshikawa, Tohoku University
Motohiko Tanaka, National Institute for Fusion Science, Hirotsugu Takizawa, Tohoku University,
Yukio Makino, Osaka University, Motoyasu Sato, National Institute for Fusion Science, Hideoki
Fukushima, Toyota Central R&D Labs., Inc., Shokichi Ohuchi, Kyushu Institute of Technology

Latter half: Analysis & Applications, Chair: Motohiko Tanaka, National Institute for Fusion Science
Noboru Yoshikawa, Tohoku University, Dmitri V Louzguine-Luzgin, Tohoku University, Kazuhiro
Nagata, Tokyo Institute of Technology, Saburo San, National Institute of Advanced Industrial Science
and Technology, Sadatusgu Takayama, National Institute for Fusion Science, Kazuchika Ohta, Shinshu
University, Masaharu Tsuji, Kyushu University, Atsushi Ashida, Osaka Prefecture University,
Motohide Matsuda, Okayama University

This workshop is opened for all attendance of GCMEA 2008.
O3-04  (C-04: August 5, 14:40 - 15:00)
“Dielectric Spectroscopy Studies to Analyze the Changes Produced During Desalted-COD Storage”, Ruth De los Reyes, Elias De los Reyes, Ana M Andres, Pedro Fito, Universidad Politecnica de Valencia, Spain

15:00 – 16:20 Biological, Medical and Environmental Applications [2] environment
Chair: Ruth De los Reyes, Universidad Politecnica de Valencia, Spain

O3-05  (C-05: August 5, 15:00 - 15:20)
“Microwave Assisted Hydrogen Production by an Integrated Biomass Gasification/Sponge Iron Process”, Thorsten Gerdes, Monika Willert-Porada, University of Bayreuth, Germany

O3-06  (C-06: August 5, 15:20 - 15:40)
“Microwave-Assisted Heterogeneous Catalyzed Process for Biodiesel Production”, Armando T. Quitain, Dewowoogen P. Baclayon, Tsukasa Chikata, Shunsaku Katoh, Research Institute for Solvothermal Technology, Japan

O3-07  (C-07: August 5, 15:40 - 16:00)
“Microwave Treatment of Hydrocarbon Contaminated Soils”, John Robinson, Sam Kingman, Colin Snape, Richelieu Barranco, Hui Shang, University of Nottingham, UK

O3-08  (C-08: August 5, 16:00 - 16:20)
“Novel Environmental Remediation Techniques with a Microwave Discharge Electrodeless Lamp (MDEL)”, Satoshi Horikoshi1), Masahiko Abe1), Masatsugu Kajitani2), Nick Serpone3), 1) Tokyo University of Science, Japan, 2) Sophia University, Japan, 3) Universita di Pavia, Italy
Lobby (Entrance Hall)

8:20 - Registration
8:30 - Exhibition
16:20 - 17:30 Poster Side Discussion (odd number posters)

Room A

8:30 - 11:00 Plenary Session by AMPERE
Organizer: Jon Binner, Loughborough University, UK

K2-1A  Keynote 8:30 - 9:25
“Plenary Talk on ‘State of the Art’ of Microwave Research in Europe”, Elias de los Reyes, Universidad Politecnica de Valencia, Spain

K2-2A  Keynote 9:25 - 9:50
“New Food-Based Application”, Jean-Paul Bernard, SAIREM S. A., France

K2-3A  Keynote 10:10 - 10:35
“New French/Italian Connection that has Led to a New Series of Meetings”, Cristina Leonelli, University of Modena and Reggio Emilia, Italy

K2-4A  Keynote 10:35 - 11:00
“German Uses of Microwaves”, Lambert E. Feher, Forschungszentrum Karlsruhe, Germany

11:20 - 12:20 Chemical Synthesis [3]
Chair: Yasunori Tsukahara, Osaka University, Japan

O1-13  (A-09: August 6, 11:20 - 11:40)
“Development of Precise Microwave Reactor with Semiconductor Microwave Source and Focused Elliptic Reaction Chamber, and Its Application to Rapid Synthesis of Various Functional Materials”, Takeko Matsumura-Inoue1), Takao Fukuoka2), Nobuo Mayama3), 1) Minerva Light Laboratory L.L.C., Japan, 2) JST CREATE Kyoto Pref., Japan, 3) CHRONIX Co. TOKYO, Japan

O1-10  (A-10: August 6, 11:40 - 12:00)
"Study on Dry Reaction Mechanism under Microwave Irradiation”, Zhongdong Liu1), Jianhui Chen1), Xiaolong Lv2), Junhui Ou3), Xiaoyun Li4), Peng Liu5), John F Kennedy6), 1) Henan University of Technology, China, 2) Tianjin University of Science and Technology, 3) Meidi Group Corporation, China., 4) University of Electronic Science and Technology, China, 5) Huanan University of Science and Technology, China, 6) The University of Birmingham, UK

O1-11  (A-11: August 6, 12:00 - 12:20)
“Chiral Control of Asymmetric Reductions by Circularly Polarized Microwaves”, Takahiro Itoh, Kenichi Imaeda, Kaname Tsutsumiuchi, Yoshio Iomi, Satoru Yamaguchi, Chubu University, Japan

Chair: Takehiro Matsuse, Shinshu University, Japan
O2-09  (A-12: August 6, 13:20 - 13:40)
“Evidence for the Microwave Effect During the Hybrid Sintering of ZnO”, Jon Binner, Karl Hossbach, Bala Vaidhyanathan, Loughborough University, UK

O2-10  (A-13: August 6, 13:40 - 14:00)
“Microwave Heating of Metal Powder/Soda-lime Glass Mixture”, Noboru Yoshikawa1), Haichuan Wang2), Ken-ichi Mashiko3), Shoji Taniguchi3), 1) Tohoku University, Japan, 2) Anhui University of Technology

O2-11  (A-14: August 6, 14:00 - 14:20)
“Microwave Assisted (Mass) Processing of Metal-Ceramic Composites”, Dinesh Agrawal1), Prashant Karandikar2), Jiping Cheng1), Michael Aghajanian2), 1) Pennsylvania State University, USA, 2) M Cubed Technologies, Inc. USA

O2-14  (A-15: August 6, 14:20 - 14:40)

   Chair: Guido Link, Forschungszentrum Karlsruhe, Germany

O2-12  (A-16: August 6, 15:00 - 15:20)
“Influence of Mineralogy and Texture on Microwave-Induced Weakening of Ores”, Aled Jones, S. Plint, Sam Kingman, University of Nottingham, UK

O2-13  (A-17: August 6, 15:20 - 15:40)
“Increased Coal Grindability as a Result of Microwave Treatment at Economic Energy Inputs”, Sam Kingman, Chris Dodds, Tao Wu, Edward Lester, University of Nottingham, UK

O2-15  (A-18: August 6, 15:40 - 16:00)
“Microwave Sintering of Aluminum Alloys”, Padmavathi Chandran1), Dinesh Agrawal2), Anish Upadhyaya3), 1) Materials and Metallurgical Engineering, IIT Kanpur, India, 2) The Pennsylvania State University, USA

O2-16  (A-19: August 6, 16:00 - 16:20)
“Fabrication of Ni-Nb-Sn Metallic Glassy Alloy Powder and Its Microwave-Induced Sintering Behavior”, Guoqiang Xie1), Song Li1), Dmitri V Louguine-Luzgin1), Ziping Cao1), Noboru Yoshikawa3), Motoyasu Sato2), Akihisa Inoue3), 1) Tohoku University, Japan, 2) National Institute for Fusion Science, Japan

Room B

11:20 – 12:20  Other Related Topics [1]
   Chair: Nguyen Tran, MPC, Australia

O7-01  (B-09: August 6, 11:20 - 11:40)

O7-02  (B-10: August 6, 11:40 - 12:00)
“Energy Dissipation in Metamaterial”, Yoshio Nikawa, Kokushikan University, Japan

O7-03  (B-11: August 6, 12:00 - 12:20)
“Air Heating System Utilizing Microwave Suspected Ceramic Materials”, Daniela M. Iordache$^1$, Dumitru I. Niculae$^2$

1) Energy Research and Modernising Institute - ICEMENERG S.A., Romania, 2) FITPOL S.R.L. Company, Romania


Chair: Rajender Singh Varma, United States Environmental Protection Agency, USA

O1-12 (B-12: August 6, 13:20 - 13:40)

O1-09 (B-13: August 6, 13:40 - 14:00)
“Microwave Enhanced Recycling of Carbon Fibers”, Chris Dodds, Sam Kingman, Edward Lester, Stephen Pickering, University of Nottingham, UK

O1-14 (B-14: August 6, 14:00 - 14:20)
“The Methods of Increasing Energy Efficiency by Irradiation of Electromagnetic Wave in High Intensity which Agrees the Absorption Wavelength of Material”, Kazuhito Kono, Buhei Kono, Shozen Co.ltd, Japan

O1-15 (B-15: August 6, 14:20 - 14:40)
“Design of Microwave Applicators, for Supercritical and Near Critical Liquid Generation, and High Pressure Microwave Chemistry”, Georgios Dimitrakis, Edward Lester, Samuel Kingman, Tao Fang, Martyn Poliakoff, Michael George, Ian Harrison, Jose Manuel Gonzalez-Gonzalez, University of Nottingham, UK

15:00 - 16:20 Chemical Synthesis [5]

Chair: Takeko Matsumura-Inoue, Minerva Light Laboratory L.L.C., Japan

O1-16 (B-16: August 6, 15:00 - 15:20)
Foaming Polyurethanes under Microwave Irradiation”, Aleksander F. Prociak, Michal Lason, Cracow University of Technology, Poland

O1-17 (B-17: August 6, 15:20 - 15:40)
“Practical Study of Nonthermal Microwave Effects Applying to Oligosaccharide Synthesis”, Hiroki Shimizu$^1$, Takahiko Matsushita$^1$, Shin-Ichiro Nishimura$^2$, 1) National Institute of Advanced Industrial Science and Technology (AIST), Japan, 2) Hokkaido University, Japan

O1-18 (B-18: August 6, 15:40 - 16:00)
“Microwave-Assisted Synthesis of N-[1-pyridin-2ylethylidene]propylamine-palladium Diacetate Complex Covalently Anchored on Glass Beads”, Mauro Iannelli, Fabio Bergamelli, Milestone s.r.l., Italy

O1-19 (B-19: August 6, 16:00 - 16:20)
“Microwave Effect on Decomposition of Organic Peroxides”, Noriaki Miyake, Hiroshi Yamamoto, Kazuhiko Yamada, Asahi Glass Co., Japan

Room C

11:20 – 12:20 Biological, Medical and Environmental Applications [3]

Chair: Thorsten Gerdes, University of Bayreuth, Germany

O3-09 (C-09: August 6, 11:20 - 11:40)
“Microwave-Assisted Headspace (MAP-HS) of Fresh and Dried Matrices”, Jacqueline M. R. Belanger, J. R. Jocelyn
O3-10 (C-10: August 6, 11:40 - 12:00)
“Microwave Pyrolysis of Organic Wastes”, John Robinson, Sam Kingman, Colin Snape, Richelieu Barranco, University of Nottingham, UK

O3-11 (C-11: August 6, 12:00 - 12:20)
“Microwave-Accelerated Basic Hydrolysis of PET”, Kazutoshi Ikenaga, Takashi Sekine, Yoshino Ogasawara, Yasuhiro Hirano, Hirotaka Oyama, Sojo University, Japan

13:20 – 14:40 Biological, Medical and Environmental Applications [4] wood, environment
Chair: Kazutoshi Ikenaga, Sojo University, Japan

O3-12 (C-12: August 6, 13:20 - 13:40)
“Investigations into the Key Mechanisms Responsible for the Strength Loss Associated with the Microwave Treatment of Timber”, Leigh R. Atken, Swinburne University, Australia

O3-13 (C-13: August 6, 13:40 - 14:00)
“Microwave Wood Modification for Timber Surface for Preservative Treatment”, Krisdianto Sugiyanto, Grigory Torgovnikov, Peter Vinden, The University of Melbourne, Australia

O3-14 (C-14: August 6, 14:00 - 14:20)
“Microwave Plasma Technology for PFC Emissions Control”, Marilena Radoiu, Edwards Ltd., UK

15:00 – 16:20 Theory and Measurements [1]
Chair: Lambert E. Feher, Forschungszentrum Karlsruhe, Germany

O5-01 (C-16: August 6, 15:00 - 15:20)
“Phase Transformations and Pore Structure Evolution in Nanostructured Alumina under Variable-Power Microwave Heating”, Kirill I. Rybakov1, Anatoly G. Eremeev1, Sergei V. Egorov3, Yury V. Bykov1, Ingrid Otto2, Zeljko Pajkic2, Monika Willert-Porada2, 1) Institute of Applied Physics of the Russian Academy of Sciences, Russia, 2) Universitat Bayreuth, Bayreuth, Germany

O5-02 (C-17: August 6, 15:20 - 15:40)
“Theoretical Studies of Microwave Heating of Liquid and Solid Matters”, Motohiko Tanaka1, Hirohiko Kono2, Koji Maruyama3, Maxim Ignatenko1, Motoyasu Sato1, 1) National Institute for Fusion Science, Japan, 2) Tohoku University, Japan, 3) RIKEN, Japan

O5-03 (C-18: August 6, 15:40 - 16:00)

O5-04 (C-19: August 6, 16:00 - 16:20)
“Numerical Study of a Chemical Reaction in Aqueous Medium under Microwave Heating”, Roddy Michel Lollchund,
Lobby (Entrance Hall)

8:20 - Registration
8:30 - Exhibition

Room A

8:30 - 11:00 Plenary Session by JEMEA
Organizers: Yuji Wada, Tokyo Institute of Technology, Japan
Motoyasu Sato, National Institute for Fusion Science, Japan

K3-1J Keynote
“Microwave Energy Absorption in Artificial Dielectric Material and Metamaterial”, Yoshio Nikawa, Kokushikan University, Japan

K3-2J Keynote
“Classification of Special Effects of MW Observed in Chemistry and their Potential in Application to Industrial Processes”, Yuji Wada, Tokyo Institute of Technology, Japan

K3-3J Keynote
“Synthesis of Advanced Inorganic Materials under Non-Equilibrium Reaction Field Induced by Microwave Irradiation”, Hirotsugu Takizawa, Tohoku Univ., Japan

K3-4J Keynote
“Microwave Processing and Its Applications to the Future Automobile”, Hideoki Fukushima, Toyota Central R&D Labs., Inc., Japan

K3-5J Keynote
“Innovation of Ironmaking by Microwave Heating”, Kazuhiro Nagata, Keita Kodama, Miyuki Hayashi, Tokyo Institute of Technology, Japan

11:20 - 12:20 System and Applications
Chair: Seitaro Mitsudo, University of Fukui, Japan

O4-01 (A-20: August 7, 11:20 - 11:40)
“Novel Methods to Investigate Microwave Specific Effects”, Guido Link1), Stefan Heissler1), Werner Faubel1), Peter Weidler1), Simone Miksch1), Manfred Thumm2), 1) Forschungszentrum Karlsruhe, Germany, 2) University of Karlsruhe, Germany

O4-02 (A-21: August 7, 11:40 – 12:00)
“Observation of Micro-scale Surface Temperature Distribution based on the Thermal Radiation Spectrum due to Microwave Material Heating”, Akihiro Matsubara1), Shigeki Okajima1), Sadatsugu Takayama2), Katsumi Ida2), Motoyasu Sato2), 1) Chubu University, Japan, 2) National Institute for Fusion Science, Japan

O4-03 (A-22: August 7, 12:00 - 12:20)
“Thin and Flexible Antenna for Microwave Application”, Masashi Nishioka, Yoshio Nikawa, Kokushikan Univ., Japan
Chair: Dinesh Agrawal, Pennsylvania State University, USA

“Shape-Dependent Evolution of Au@Ag Core-Shell Nanocrystals by PVP-Assisted N,N-dimethylformamide Reduction”, Masaharu Tsuji1, Ryoichi Matsuo1, Peng Jiang2, Nobuhiro Miyamae3, Daisuke Ueyama3, Michiko Nishio3, Sachie Hikino3, Hisayo Kumagae3, Khairul Sozana Nor Kamarudin3, Xin-Ling Tang1, 1) Kyushu University, Japan, 2) National Center for Nanoscience and Technology, China, 3) Universiti Teknologi Malaysia, Malaysia

O2-17 (A24: August 7, 13:40 - 14:00)
“Rapid Microwave Assisted Sintering of Silver Conductive Thick Films for Display Panels”, Seongjin Hwang1, Hyunsun Kim1, Paolo Veronesi2, Cristina Leonelli2, 1) Inha University, Korea, 2) University of Modena and Reggio Emilia, Modena, Italy

O2-18 (A25: August 7, 14:00 - 14:20)
“Phase Transformation of Microwave Heated Crystalline Metallic-Metalloid Powders”, Song Li1, Guoqiang Xie3, Dmitri V Louzguine-Luzgin3, Ziping Cao1, Noboru Yoshikawa3, Motoyasu Sato2, Akihisa Inoue1, 1) Tohoku University, Japan, 2) National Institute for Fusion Science, Japan

O2-19 (A26: August 7, 14:20 - 14:40)
“Duplex Microwave Irradiation System for Metallic Materials Processing”, Masami Taguchi1, Kazutaka Okamoto1, Noboru Baba1, Masumi Kuga2, Tomokatsu Oguro2, Toshio Ogura2, 1) Hitachi, Ltd., Japan, 2) Hitachi Kyowa Engineering Co., Ltd., Japan

15:00 – 16:20 Materials Processing [6] metal, ceramics
Chair: Miyuki Hayashi, Tokyo Institute of Technology, Japan

O2-20 (A27: August 7, 15:00 - 15:20)
“Sintering Advances in Consolidating W Based Alloys”, Avijit Mondal1, Anish Upadhyaya1, Dinesh Agrawal2, 1) Indian Institute of Technology, India, 2) The Pennsylvania State University, USA

O2-21 (A28: August 7, 15:20 - 15:40)
“Microwave Heating Behavior of Metallic Powders in a Multimode and a Single Mode Applicator”, Song Li3, Guoqiang Xie3, Dmitri V Louzguine-Luzgin3, Ziping Cao1, Noboru Yoshikawa3, Motoyasu Sato2, Akihisa Inoue1, 1) Tohoku University, Japan, 2) National Institute for Fusion Science, Japan

O2-22 (A29: August 7, 15:40 - 16:00)
“A Model Approach on Diffusion Behavior of Cr3+ Ion in Cr2O3-Added Alumina under Millimeter-Wave Radiation”, Yukio Makino3, Toshiyuki Ueno2, Saburo Sano3, Shoji Miyake4, 1) Osaka University, Japan, 2) Shimane Institute for Industrial Technology, Japan, 3) National Institute of Advanced Industrial Science and Technology (AIST), Japan, 4) Kinki University, Japan

O2-23 (A30: August 7, 16:00 - 16:20)
“Microwave Treatment of Metallic Glassy Powders”, Dmitri V. Louzguine3, S. Li1, G. Q. Xie1, A Inoue3, N Yoshikawa3, K Mashiko3, S Taniguchi3, M Sato2, 1) Tohoku University, Japan, 2) National Institute for Fusion Science, Japan

16:40 – 18:00 Materials Processing [7] metal, iron making
Chair: Chenguang Bai, Chongqing University, China
**O2-24**  (A-31: August 7, 16:40 - 17:00)
“Dependence of Microwave Heating Behavior on the Thickness of Metal Thin Films”, Ziping Cao, Noboru Yoshikawa, Shoji Taniguchi, *Tohoku University, Japan*

**O2-25**  (A-32: August 7, 17:00 - 17:20)
“‘Who Says You Can't Microwave a Fork?’ Microwaving Metal Processing”, Edward Bolling Ripley, *Member of MWG, USA*

**O2-26**  (A-33: August 7, 17:20 - 17:40)
“Effects of Electric and Magnetic Fields on Microwave Induced Carbothermic Reduction of Magnetite-Graphite Mixtures”, Miyuki Hayashi, Keiji Takagi, Kazuhiro Nagata, *Tokyo Institute of Technology, Japan*

**O2-27**  (A-34: August 7, 17:40 - 18:00)
“Microwave versus Conventional Hydrothermal Reaction of Blast Furnace Slag”, Soon-Jae Tae, Kazuki Morita, *The University of Tokyo, Japan*

**Room B**

**11:20 – 12:20 Other Related Topics [2]**
**Chair:** Vadim V. Yakovlev, *Worcester Polytechnic Institute, USA*

**O7-04**  (B-20: August 7, 11:20 - 11:40)
“Hybrid Microwave Systems and Processes for Advanced Materials Engineering”, Monika Alexandra Willert-Porada, *University of Bayreuth, Germany*

**O7-05**  (B-21: August 7, 11:40 - 12:00)
“Lab-Scale System for Microwave and Plasma Experiments”, Nguyen Tran, *MPC, Australia*

**O7-06**  (B-22: August 7, 12:00 - 12:20)
“Utilization of the Thermal Effect Produced by the Microwave Susceptor Ceramic Materials for Water Heating”, Daniela M. Iordache¹, Dumitru I. Niculae², ¹) *Energy Research and Modernising Institute, Romania*, ²) *FITPOL S.R.L. Company, Romania*

**13:20 - 14:40 Chemical Synthesis [6]**
**Chair:** Samuel Kingman, *University of Nottingham, UK*

**O1-20**  (B-23: August 7, 13:20 - 13:40)
“Possibility of 5.8GHz Microwave in Organic Synthesis”, Satoshi Horikoshi³, Masahiko Abe¹, Masatsugu Kajitani², Nick Serpoe³, ¹) *Tokyo University of Science, Japan*, ²) *Sophia University, Japan*, ³) *Universita di Pavia, Italy*

**O1-21**  (B-24: August 7, 13:40 - 14:00)
“Recycling of Polymeric Materials under Microwave Irradiation”, Dariusz Bogdal, Jan Pieliacwski, *Cracow University of Technology, Poland*

**O1-22**  (B-25: August 7, 14:00 - 14:20)

**O1-23**  (B-26: August 7, 14:20 - 14:40)
“Microwave Processing of Waterborne Polyurethane Coatings on Glass”, Chris Y. Fang, I-Kang Chen, Hoi Kwan Lee, Carlo G. Pantano, Pennsylvania State University, USA

15:00 – 16:20 Chemical Synthesis [7]
Chair: Dariusz Bogdal, Cracow University of Technology, Poland

O1-24 (B-27: August 7, 15:00 - 15:20)
“Acceleration Mechanism in the Solvent-Free Synthesis of Heterocyclic Compounds”, Hideko Koshima1), Kyoko Takechi1), Asami Ikeda1), Takaaki Suematsu2), 1) Ehime University, Japan, 2) Hitachi Plant Technologies, Ltd., Japan

O1-25 (B-28: August 7, 15:20 - 15:40)
“The Influence of Microwave Heating on the Initiation Steps of Free Radical Polymerisation Reactions”, John Robinson, Alastair Smith, Ed Lester, Sam Kingman, Kris Thurecht, Derek Irvine, University of Nottingham, UK

O1-26 (B-29: August 7, 15:40 - 16:00)
“Microwave Assisted Transesterification of Vegetable Oil to Prepare Biodiesel with Acidified Ionic Liquid”, Zhou Liu, Changyuan Tao, Renlong Liu, Jun Du, Baizhan Li, Chongqing University, China

O1-27 (B-30: August 7, 16:00 - 16:20)
“Dielectric Relaxation of Monoalkyl Ethers of Polyethylene Glycol at Microwave Frequencies”, Yoko Yamada Pittini1), Dana Daneshvari1), R. Pittini1), Sebastien Vaucher1), Hans Leuenberger2), 1) EMPA, Swiss, 2) University of Basel, Swiss, 3) Institute for Innovation in Industrial Pharmacy, Swiss

16:40 – 18:00 Theory and Measurements [2]
Chair: Kirill I. Rybakov, Institute of Applied Physics of the Russian Academy of Sciences, Russia

O5-05 (B-31: August 7, 16:40 - 17:00)
“Microwave Plasma Simulation - Using Scientific Models to Build New Technologies”, Christian Hunyar, Eberhard Rauchle, Matthias Graf, Lukas Alberts, Rudolf Emmerich, Mathias Kaiser, Klaus-Dieter, Fraunhofer Institute for Chemical Technology (ICT), Germany

O5-06 (B-32: August 7, 17:00 - 17:20)
“A Neural Network Technique for Reconstruction of 2D Complex Permittivity Profiles of Materials in Waveguide Systems”, Alexander V. Brovko2), Ethan K. Murphy1), Vadim V. Yakovlev3), 1) Worcester Polytechnic Institute, USA, 2) Saratov State Technical University, Russia

O5-15 (B-33: August 7, 17:20 - 17:40)
“Microwave Absorption Behavior of Metal Powders at Elevated Temperature”, Saburo Sano1), Yasumasa Takao3), Shoji Kawakami1), Akihiro Tsuzuki1), Sadatsugu Takayama2), Motoyasu Sato2), Yukio Makino3), 1) National Institute of Advanced Industrial Science and Technology, Japan, 2) National Institute for Fusion Science, Japan, 3) Osaka University, Japan

O5-08 (B-34: August 7, 17:40 - 18:00)
“The Quantum Nature of Microwave Heating, Processing and Effects in Discussion with Classical Electrodynamics”, Lambert E. Feher, Forschungszentrum Karlsruhe, Germany

Room C

11:20 – 12:20 Biological, Medical and Environmental Applications [5] environment, health
Chair: J. R. Jocelyn Pare, Environment Canada, Canada
O3-16  (C-20: August 7, 11:20 - 11:40)
“Hybrid Technology with Microwaves, Electron Beams and Catalysts for VOCs Removal”, Ioan Calinescu1), Daniel Ighigeanu2), Diana Martin3), Constantin Matei3), Adrian Trifan3), 1) Polytechnic University, Romania, 2) National Institute for Lasers, Plasma and Radiation Physics, Romania

O3-17  (C-21: August 7, 11:40 - 12:00)
“High Power Sub-THz Gyrotron FU CW II for Application to DNP/NMR for Protein Research”, Toshitaka Idehara1), Isamu Ogawa1), Shinichiro Kobayashi1), Mitsuhiro Toda3), Seitaro Mitsudo1), Teruo Saito3), Hiroki Takahashi1), Toshimichi Fujiwara2), 1) University of Fukui, Japan, 2) Osaka University, Japan

O3-18  (C-22: August 7, 12:00 - 12:20)
“Injuries Caused by Microwave Ovens”, Robert F. Schiffmann, R.F. Schiffmann Associates, Inc., USA

Chair: Juming Tang, Washington State University, USA

O6-01  (C-23: August 7, 13:20 - 13:40)
“Main Aspects of Microwave Wood Modification Applicable to the Timber Industry”, Grigory Torgovnikov, Peter Vinden, University of Melbourne, Australia

O6-02  (C-24: August 7, 13:40 - 14:00)
“Study on a Microwave Irradiation Cavity for Pretreatment of Ethanol Production from Woody Biomass”, Hiroaki Suzuki1), Tomohiko Mitani1), Naoki Shinohara1), Masahumi Oyadomari1), Takashi Watanabe1), Takahiko Tsumiya2), Hisayuki Sego3), 1) Kyoto University, Japan, 2) Japan Chemical Engineering & Machinery Co., Ltd., Japan

O6-03  (C-25: August 7, 14:00 - 14:20)
“Establishment of the Safety Areas to Wood Disinfestation by Microwaves”, Angela Tatiana Zona, Juan Vicente Balbastre, Luis Nuno, Elias de los Reyes, Oneira Calderon, Polytechnic University of Valencia, Spain

O6-04  (C-26: August 7, 14:20 - 14:40)
“Procedure to Exterminate Woodworm in Wood Timbers by Microwave-Power Application”, Angela Tatiana Zona, Juan Vicente Balbastre, Luis Nuno, Elias de los Reyes, Oneira Calderon, Eva Perez, Maria Victoria Vivancos, Polytechnic University of Valencia, Spain

15:00 – 16:20  Industrial Applications [2]  cooking
Chair: Grigory Torgovnikov, The University of Melbourne, Australia

O6-05  (C-27: August 7, 15:00 - 15:20)
“Ceramic Composites for Microwave Grilling and Speed Cooking”, Thomas Quantrille, Advanced Composite Materials, LLC, USA

O6-06  (C-28: August 7, 15:20 - 15:40)
“Microwave Assisted Process Intensification in Large Scale Fluidized Beds”, Thorsten Gerdes1), Monika Willert-Porada1), Achim Schmid1), Nicola Anastasijevic3), Matthias Runkel3), 1) University of Bayreuth, Germany, 2) InVerTec, Institut fur Innovative Verfahrenstechnik, Germany, 3) Outotec GmbH, Germany

O6-07  (C-29: August 7, 15:40 - 16:00)
“Industrial Microwave Heated Fluid Injector”, Sebastijan Stanculovic1), Lambert Feher1), Manfred Thumm2), 1) Research Center Karlsruhe, Institute for Pulsed Power and Microwave Technology, Germany, 2) University of
Karlsruhe, Germany

O6-09  (C-30: August 7, 16:00 - 16:20)
“Microwave De-/Anti-icing Using the MIDAS-Technology”, Lambert Feher, Thomas Seitz, Volker Nuss, Forschungszentrum Karlsruhe, Germany

16:40 – 18:00  Industrial Applications [3]
Chair: Masahiro Suzuki, Japan Atomic Energy Agency, Japan

O6-08  (C-31: August 7, 16:40 - 17:00)
“Microwave Treatment of Oil-Contaminated Drill Cuttings”, John Robinson¹, Sam Kingman¹, Colin Snape¹, Richelieu Barranco³, Hui Shang¹, Mike Bradley², Steven Bradshaw³, Dominic Thomas⁸, Paul Page³, 1) University of Nottingham, UK, 2) University of Greenwich, UK, 3) University of Stellenbosch, South Africa, 4) BG International, 5) Bp Exploration, UK

O6-10  (C-32: August 7, 17:00 - 17:20)
“Design and Numerical Simulation of a High-Efficiency Microwave Applicator for the Industrial Processing of Non-Absorbing Materials via Microwave Susceptors”, Jacqueline M. R. Belanger¹, J. R. Jocelyn Pare³, Ankam Bhaskar¹, Craig Fairbridge², Jean-Francois Rochas³, 1) Environment Canada, Canada, 2) Natural Resources Canada, Canada, 3) CETIAT, Canada

O6-16  (C-33: August 7, 17:20 - 17:40)
“Miniature Transistor-Based Microwave Drill”, Ohad M. Mela¹, Eli Jerby², 1) Tel Aviv University, Israel, 2) Scilense Microwave Ltd., Israel

O6-12  (C-34: August 7, 17:40 - 18:00)
“Pulsed Microwave Source for Drying of High Voltage Porcelain Insulators with Large Section Thicknesses”, G Swaminathan², S. Vijaya Kumar¹, K. P. Ray², Rajesh Rangari², Vijay sarode², 1)Bharat Heavy Electricals Limited, India, 2) Society for Applied Microwave Electronics Engineering and Research, India

Official Dinner  19:00 - 21:30
Awarding ceremony
Lobby (Entrance Hall)

8:20 -   Registration
8:30 -   Exhibition

Room A

8:30 –  9:50 Materials Processing [8]   iron making, reduction of oxide
Chair: Dmitri V Louguine-Luzgin, Tohoku University, Japan

O2-28 (A-35: August 8,  8:30 -  8:50)
“Carbothermal Reduction of Magnetite by Microwave Irradiation”, Kotaro Ishizaki\(^1\), Kazuhiro Nagata\(^2\), 1) EMPA Swiss Federal Laboratories for Materials Science and Technology, Swiss, 2) Tokyo Institute of Technology, Japan

O2-29 (A-36: August 8,  8:50 -  9:10)
“Kinetics of Carbothermic Reduction of Magnetite Powder Mixed with Graphite Heated by Microwave”, Kazuhiro Nagata, Keita Kodama, Miyuki Hayashi, Tokyo Institute of Technology, Japan

O2-30 (A-37: August 8,  9:10 -  9:30)
“Carbon-Thermal Reduction of Polymetallic Minerals with Microwave Assistance”, Guibao Qiu, Chenguang Bai, Liangying Wen, Feng Xia, Xuwei Lv, Chongqing University, China

O2-31 (A-38: August 8,  9:30 -  9:50)
“Fireballs Ejected from Solids and Liquids by Localized Microwaves”, Eli Jerby\(^1\), A. Golts\(^1\), Y. Shamir\(^1\), V. Dikhtyar\(^3\), J. B. A. Mitchell\(^2\), J. L. LeGarrec\(^2\), T. Narayanan\(^3\), M. Szucki\(^2\), N. Eliaz\(^1\), D. Ashkenazi\(^1\), Z. Barkay\(^1\), 1) Tel Aviv University, Israel, 2) Universite de Rennes, France, 3) European Synchrotron Radiation Facility, France

10:10 - 11:30 Materials Processing [9]
Chair: Motohide Matsuda, Okayama University, Japan

O2-32 (A-39: August 8,  10:10 - 10:30)
“Study of Thermo Behavior of Ammonium Polyorthovanadate (APV) under Microwave Irradiation”, Chenguang Bai\(^3\), Renlong Liu\(^1\), Guibao Qiu\(^1\), Liangying Wen\(^1\), Yiping Zhou\(^2\), Baiyun Gao\(^2\), 1) Chongqing University, China, 2) Panzhihua Iron and Steel (Group) Company, China

O2-33 (A-40: August 8,  10:30 - 10:50)
“The Potential for Rapid Microwave Coke Making Using Microwave Energy”, Maria Mediero-Munoyerro, Chris Dodds, Sam Kingman, Edward Lester, University of Nottingham, UK

O2-34 (A-41: August 8,  10:50 - 11:10)
“Influence of the Secondary Phase Component on Microwave Sintering Process”, Masaki Yasuoka, Takashi Shirai, Koji Watari, National Institute of Advanced Industrial Science and Technology (AIST), Japan

O2-35 (A-42: August 8,  11:10 - 11:30)
“A Point-Contact Microwave Applicator for Local Doping in Silicon”, Eliahu Jerby, Pavel Livshits, Abraham Shahadi, Vladimir Dikhtyar, Alexandra Inberg, Tel Aviv University, Israel
   Chair: Eli Jerby, Tel Aviv University, Israel

O2-36  (A-43: August 8, 11:50 - 12:10)
“Microwave Co-Heating of YSZ Electrolyte Film and NiO-YSZ Composite Substrate”, Motohide Matsuda, Hironori
Kawasaki, Michihiro Miyake, Okayama University, Japan

O2-37  (A-44: August 8, 12:10 - 12:30)
“On Microwave Selective Heating of Multi Phase Materials”, Noboru Yoshikawa1), Yoshio Tokuyama2), Yan Chen3),
Shoji Taniguchi1), 1) Tohoku University, Japan, 2) M & T Co. Ltd., Japan, 3) Anhui University of Technology,

O2-38  (A-45: August 8, 12:30 - 12:50)
“Formation of Nano-Domains by Microscopic Thermal Non-Equilibrium Generated in GHz High Frequency
Microwave Field”, Motoyasu Sato1), Nobuyuki Nishi2), Motohiko Tanaka3), Akihiro Matsubara1), Sadatugu Takayama1),
Hideoki Fukushima3), Maxim Ignatenko1), Rustum Roy4), Dinesh Agrawal4), Jun Fukusima1), 1) National Institute for
Fusion Science, Japan, 2) Institute of Molecular Science, Japan, 3) Toyota Central R&D Laboratory, Japan, 4) Pennsylvania
State University, USA

“High Temperature Dielectric Property Measurement”, Edward Bolling Ripley, Brian C Warren, B&W Technologies,
USA

13:10 – 13:30  Closing Ceremony

Room B

8:30 –  9:50  Industrial Applications [4]
   Chair: Hirotsugu Takizawa, Tohoku Univ., Japan

O6-13  (B-35: August 8, 8:30 -  8:50)
“Application of Microwave Heating to MOX Fuel Production and Its Contribution to Japanese Energy Strategy”,
Masahiro Suzuki, Katsunori Ishii, Takuma Yamamoto, Yoshiyuki Kihara, Yoshiyuki Kato, Tsutomu Kurita, Katsunobu
Yoshimoto, Kan-ichi Fujii, Japan Atomic Energy Agency, Japan

O6-14  (B-36: August 8, 8:50 - 9:10)
“Discussion on Optimization of Microwave Heating for MOX Fuel Production”, Yoshiyuki Kato, Tsutomu Kurita,
Masaki Matsumoto, Katsunobu Yoshimoto, Masahiro Suzuki, Katsunori Ishii, Takuma Yamamoto, Yoshiyuki Kihara,
Kan-ichi Fujii, Japan atomic energy agency, Japan

O6-15  (B-37: August 8,  9:10 -  9:30)
“Patch Array to Generate Microwave Surface Wave”, Yoshio Nikawa, Kokushikan University, Japan

O6-11  (B-38: August 8,  9:30 -  9:50)
“Development of a Continuous Kiln Using Progressive Wave”, Hisanori Hoshizuki, Yuji Maki, Fumihito Ozeki,
Yoshiharu Kajita, MINO CERAMIC CO., LTD., Japan

10:10 – 11:30  Theory and Measurements [3]
   Chair: Motohiko Tanaka, National Institute for Fusion Science, Japan

O5-09  (B-39: August 8, 10:10 - 10:30)
“Microwave Heating of Pure Copper Powder with Different Particle Size and Porosity”, AVIJIT MONDAL1), Dinesh Agrawal2), Anish Upadhyaya1), 1) Indian Institute of Technology Kanpur, India, 2) The Pennsylvania State University, USA

OS-10  (B-40: August 8, 10:30 - 10:50)
“Penetration of Microwave Radiation through Metallic Powders”, V. D. Buchelnikov1), D. V. Louzguine-Luzgin2), G. Xie3), S. Li3), N. Yoshikawa3), M. Sato3), A. P. Anzulevich1), I. V. Bychkov1), A. Inoue2), 1) Chelyabinsk State University, Russia, 2)Tohoku University, Japan, 3) National Institute for Fusion Science, Japan

OS-11  (B-41: August 8, 10:50 - 11: 10)
“Microwave Absorbability of Various Solutions at Elevated Temperatures”, Tsukasa Chikata1), Shunsaku Katoh1), Masato Sakiyama2), 1) Research Institute for Solvothermal Technology, Japan, 2) A&A Material Corporation, Japan

OS-12  (B-42: August 8, 11:10 - 11:30)
“A Novel Approach for Measurement of Temperature Dependent Dielectric Properties of Polymer Resins at 2.45 GHz”, Jaleel Akhtar1), Lambert Feher1), Manfred Thumm2), 1) Forschungszentrum Karlsruhe GmbH, Germany, 2) Universitaet Karlsruhe, Germany

Chair: Tsukasa Chikata, Research Institute for Solvothermal Technology, Japan

OS-13  (B-43: August 8, 11:50 - 12:10)
“Influence of Microwave Irradiation on Calcium Sulphate Crystal Phase”, Xiaoqing Yang, Kama Huang, Guozhu Jia, Sichuan University, China

OS-14  (B-44: August 8, 12:10 - 12:30)
“Microwave Absorption Mechanisms of Raw Materials and Refractories for Iron Making - Permittivity and Permeability Measurements of SiO2 and Fe3O4”, Masahiro Hotta, Miyuki Hayashi, Kazuhiro Nagata, Tokyo Institute of Technology, Japan

OS-07  (B-45: August 8, 12:30 - 12:50)
“Complex Permittivity Measurement of Fluids, at High Pressures, and High Temperatures, Using Coaxial Reflection Sensors”, Georgios Dimitrakis1), Edward Lester1), Samuel Kingman1), Robert Clarke2), Andrew Gregory2), Kevin Lees2), 1) The University of Nottingham, UK, 2) National Physical Laboratory, UK

OS-16  (B-46: August 8, 12:50 - 13:10)
“Microwave Effects in Carbon-Polyolefin Composite”, Yutaka Iizuka, Jun-ichi Sugiyama, Takahiro Satou, AIST, Japan

Room C

8:30 - 12:00  Workshop II: Millimeter-wave and THz Technologies
Session organizer: Teruo Saito, Fukui University, Japan

Chair: Teruo Saito, Fukui University, Japan

WSII-O1  (C36: August 8,  8:40 -  9:10)
“THz Gyrotrons FU CW Series for High Power THz Technologies”, Toshitaka Idehara, Teruo Saito, Isamu Ogawa, Seitaro Mitsudo, Yoshinori Tatematsu, University of Fukui, Japan

WSII-O2  (C37: August 8,  9:10 -  9:40)
“Millimeter-Wave Sintering of Optically Transparent Nd:Y2O3-Ceramics”, Yu. V. Bykov1, S. V. Egorov1, V. V. Kholoptsev1, A. A. Sorokin1, V. V. Osipov2, M. G. Ivanov2, V. V. Platonov2, A. S. Kaygorodov2, 1) Institute of Applied Physics of the Russian Academy of Sciences, Russia, 2) Institute of Electrophysics, Russia

WSII-O3 (C38: August 8, 9:40 - 10:10)

“Propagation of Terahertz Waves in Structured Metals”, Masanori Hangyo1, Keisuke Takano1, Kyoji Shibuya1, Fumiaki Miyamaru2, Keita Izumi3, Hiroshi Miyazaki3, Yoji Jimba4, 1) Osaka University, Institute of Laser Engineering, Japan, 2) Shinshu University, Japan, 3) Tohoku University, Japan, 4) Nihon University, Japan

10:10 – 10:30 coffee break

Chair: Takashi Shimozuma, National Institute for Fusion Science, Japan

WSII-O4 (C39: August 8, 10:30 - 10:50)

“Millimeter Wave Sintering of Metal Powder Compacts Utilizing a Modified Dilatometer for Resistivity Measurements”, Guido Link1, Junichi Ichikawa2, Manfred Thumm2, 1) Forschungszentrum Karlsruhe, Germany, 2) Hitachi Powdered Metals co., Ltd., Japan, 3) University of Karlsruhe, Germany

WSII-O5 (C40: August 8, 10:50 - 11:10)

“Submillimeter Wave Material Processing”, Seitaro Mitsudo1, Yoshihisa Kobayashi1, Tomoaki Nakano1, Toshtaka Idehara1, Teruo Saito1, Saburo Sano2, Tsuguo Ueda2, 1) University of Fukui, Japan, 2) National Institute of Advanced Industrial Science and Technology, 3) Fukushin kougyou Co., Ltd., Japan

WSII-O6 (C41: August 8, 11:10 - 11:30)

“Shock Wave Generation Using a High Power Millimeter Wave Beam”, Yasuhisa Oda1, Ken Kajiwara1, Koji Takahashi1, Atsushi Kasugai1, Keishi Sakamoto1, Kimita Komurasaki1, 1) Japan Atomic Energy Agency, Japan, 2) the university of Tokyo, Japan

11:30 – 11:50 coffee break

Chair: Yu. V. Bykov, Institute of Applied Physics of the Russian Academy of Sciences, Russia

WSII-O7 (C42: August 8, 11:50 - 12:10)

“Handling Technology of Mega-Watt Millimeter-Waves for Optimized Heating of Fusion Plasmas”, Takashi Shimozuma1, Shin Kubo1, Y. Yoshimura1, H. Igami1, H. Takahashi1, Y. Takita1, S. Kobayashi1, S. Ito1, Y. Mizuno3, Hiroshi Idei1, Takashi Notake1, Michael Shapiro2, Richard Temkin2, Federico Felic3, Timothy Goodman3, Olivier Sauter5, R. Minami6, T. Kariya6, R. Minami6, T. Kariya6, Yutaro Minami1, 1) National Institute for Fusion Science, Japan, 2) Kyushu University, Japan, 3) University of Fukui, Japan, 4) Massachusetts Institute of Technology, USA, 5) Centre de Recherches en Physique des Plasmas, 6) University of Tsukuba, Japan

WSII-O8 (C43: August 8, 12:10 - 12:30)

“ECRH Antenna Performance in a Limited Spatial Availability”, Hiroyuki Shidara1, Tsuyoshi Imai1, Yusuke Sakagoshi1, Mark A Henderson2, Tsuyoshi Kariya1, Ryutaro Minami1, 1) University of Tsukuba, Japan, 2) ITER organization

WSII-O9 (C44: August 8, 12:30 - 12:50)

“Theory and Design of the Free Electron Maser with Advanced Bragg Resonator”, Keiichi Kamada1, Mikiko Kawamura1, Kousuke Aizawa1, Shuhei Odawara1, Ritoku Ando1, N. S. Ginzburg2, A. M. Malkin2, N. Yu. Peskov2, A. S. Sergeev2, V. Yu. Zaslavsky2, 1) Kanazawa University, Japan, 2) Institute of Applied Physics, Russian Academy of Science, Russia
Poster Presentations

Poster side discussion

for even number posters: August 5, 16:20 - 17:30
(e.g. P1-02, P1-04, ..., P2-02, ...)

for odd number posters: August 6, 16:20 - 17:30
(e.g. P1-01, P1-03, ..., P2-01, ...)

Posters should be posted before August 5, 12:00, and take off after August 7, 18:00.

1. Chemical Synthesis

P1-01
“Efficient Microwave-Assisted Synthesis of 1-Tetralones from 4-Arylbutyric Acids Using Solid Acid Catalysts”, Hiroshi Yamashita, Kazuaki Hiroki, Makiko Hatori, Jun-ichi Sugiyama, National Institute of Advanced Industrial Science and Technology (AIST), Japan

P1-02
“Biodegradable Films Preparation from Microwave-Assisted Esterification of Pineapple Leaf Cellulose”, Usarat Ratnakamnuan1, Supakitt Treethammakul1, Nutthawut Gritayarnon1, Duangduen Atong2, Duangdao Aht-Ong3, 1) Chulalongkorn University, Thailand, 2) National Metal and Materials Technology Center, Thailand

P1-03
“Solvent Effect for Microwave Irradiation to Claisen Rearrangement”, Fumiyoshi Ozaki, Yutaka Okada, Ritsumeikan University, Japan

P1-04
“Synthesis of Si3N4 by Microwave-Assisted Carbothermal Reduction and Nitridation”, Ruth H. G. A. Kiminami, Argos Y. Coletti, Wellington I Idalgo, Pollyane M. de Souza, Federal University of Sao Carlos, Brazil

P1-05
“Liquid-phase Reaction of 2-Hydroxyacetophenone and Benzaldehyde over SO3H15 Catalysts: Influence of Microwave and Thermal Effects”, Shunmugavel Saravana, Eko Adi Prasetyanto, Sang-Eon Park, INHA University, Korea

P1-06
“Specific Microwave Effects in Microwave-Assisted Ether Generating Reaction through Dimerization of Alcohol and the Following Friedel-Crafts Reaction”, Soshi Ohta1, Makoto Yasuda2, Srinivasa Rao Arulananda Babu2, Akio Baba2, Dai Mochizuki1, Tomohisa Yamauchi2, Yasunori Tsukahara2, Yuji Wada1, 1) Tokyo Institute of Technology, Japan, 2) Osaka Univ., Japan

P1-07
“Heating Phenomena of Mixed Organic Molecules under Microwave Irradiation”, Daisuke Wakino, Shinnosuke Arimitsu, Shokichi Ohuchi, Kyushu Institute of Technology, Japan

P1-08
“Combined Effects of Microwaves, Electron Beams and Polyfunctional Monomers on Rubber Vulcanization”, Elena Manaila1, Diana Martin1, Daniela Zuga2, Gabriela Craciun1, Daniel Ighigeanu1, Constantin Matei1, 1) National Institute for Lasers, Plasma and Radiation Physics, Romania, 2) National R&D Institute for Textile and Leather, Romania
P1-09
“Depolymerization of Cellulose in High-Boiling Solvent by Microwave-Assisted Heating”, Akiyoshi Sasaki1), Masahide Sasaki1), Kenji Takahashi2), Atsushi Narumi3), Toshifumi Satoh4), Toyoji Kakuchi4), Harumi Kaga1), 1) National Institute of Advanced Industrial Science and Technology (AIST), Japan, 2) Kanazawa University, Japan, 3) Yamagata University, Japan, 4) Hokkaido University, Japan

P1-10
“Catalytic Application of Carbon Templated Mesoporous Slicalite-1 Prepared by Microwave”, Nanzhe Jiang, Sang-Eon Park, INHA University, Korea

P1-11
“Use of Microwave for Efficient Syntheses of Heterocyclic Compounds”, Li-Jian Ma, Zhen-Wu Mei, Tomoyo Kasuyama, Masahide Uekawa, Tsutomu Inokuchi, Okayama University Japan

P1-12
“Improvement of Amino Acid Analysis by Rapid Pretreatment Using Microwave”, Satoko Matsuo3), Tomohiko Yoshimoto1), Shinya Yamaoka3), Shokichi Ohuchi3), 1) Kyushu Institute of Technology, Japan, 2) Sinryo Co., Ltd., Japan

P1-13
“Microwave Assisted Synthesis of Highly Active Ceria-Zirconia Nanocomposites for CO Oxidation”, Benjaram M Reddy,  Yeong-Hui Seo, Hailian Jin, Eko Adi Prasetyanto, Sang-Eon Park, INHA University, Korea

P1-14
“Microwave Synthesis and Processing of Phosphors”, Chris Y. Fang, Dinesh K. Agrawal, William White, Rustum Roy, Pennsylvania State University, USA

P1-15
“Microwave Synthesis of Zeolites-Y Having Mesopores by Carbon Templating Method”, Eun-Yong Jeong, Nanzhe Jiang, Sang-Eon Park, INHA University, Korea

P1-16
“Microwave-assisted H-D Exchange Reaction of Heterocyclic Aromatic Compounds”, Haruki Shimodaira12), Toshifumi Abe3), Taichi Abe3), Yuji Kawanishi3), Akira Miyazawa3), 1) Taiyo Nippon Sanso Corporation, Japan, 2) National Institute of Advanced Industrial Science and Technology, Japan

P1-17
“Microwave-Assisted Synthesis of Isoflavone Derivatives with Hypervalent Iodine Reagents”, Hidekazu Konishi1), Mohammad Mamun Hossain2), Takashi Harihara1), Yasuhiko Kawamura1), Masao Tsukayama1), 1) The University of Tokushima, Japan, 2) The University of Jahangirmagar, Bangladesh

P1-18
“Microwave-Assisted Rapid Esterification of Carboxylic Acids and Alcohols on Solid Acid”, Kazuhiko Takeuchi, Yukari Hori, Rino Koga, Yukie Mori, Takashi Nakamura, Ritsuko Nagahata, National Institute of Advanced Industrial Science and Technology, Japan

P1-19
“Microwave Effect in the Synthesis of Benzimidazoles”, Kyoko Takechi1), Hideko Koshima1), Takaaki Suematsu2), 1) Ehime University, Japan, 2) Hitachi Plant Technologies, Ltd, Japan

P1-20
“Microwave-Assisted Preparation of Poly(fluorene)s by Ni/Pd Catalyzed C-C Bond Reaction”, Shinpei Miyamoto\textsuperscript{1)}, Susumu Tanaka\textsuperscript{1)}, Jun-ichi Sugiyama\textsuperscript{1)}, Kenji Machida\textsuperscript{2)}, Shunzo Suematsu\textsuperscript{2)}, Kenji Tamamitsu\textsuperscript{2)}, 1) AIST, Japan, 2) Nippon Chemi-Con Corporation, Japan

P1-21
“Microwave Irradiation Effect for Fries Rearrangement of Benzenes”, Yasutaka Iwata, Yutaka Okada, Ritsumeikan University, Japan

P1-22
“Microwave-Assisted Selective Alkylation of Naphthalene Compounds Using Zeolite Catalysts and Alcohols”, Yumi Mitsukura\textsuperscript{1)}, Hiroshi Yamashita\textsuperscript{1)}, Kazuaki Hiroki\textsuperscript{1)}, Jun-ichi Sugiyama\textsuperscript{1)}, Kiyotaka Onishi\textsuperscript{2)}, Tetsuo Sakamoto\textsuperscript{2)}, 1) National Institute of Advanced Industrial Science and Technology (AIST), Japan, 2) Nippon Steel Chemical Co., Ltd., Japan

P1-23
“Bimetallic Nanoparticles Prepared by Microwave Assisted Alcohol Reduction”, Shohei Takizawa\textsuperscript{1)}, Dai Mochizuki\textsuperscript{1)}, Yasunori Tsukahara\textsuperscript{2)}, Tomohisa Yamauchi\textsuperscript{2)}, Yuji Wada\textsuperscript{1)}, 1) Tokyo Institute of Technology, Japan, 2) Osaka Univ., Japan

P1-24
“Kinetic Study of Microwave Assisted Enzymatic Reaction”, Seigo Kimoto, Yasuyuki Ueda, Satoko Matsuo, Shokichi Ohuchi, Kyushu Institute of Technology, Japan

P1-25

P1-26
“The Vilsmeier Reaction of Methoxy Substituted Benzenes Using Microwaves”, Tsuneo Suzuki\textsuperscript{1)}, Kiyoshi Tanemura\textsuperscript{1)}, Yoko Nishida\textsuperscript{2)}, Takaaki Horaguchi\textsuperscript{2)}, 1) The Nippon Dental University, Japan, 2) Niigata University, Japan

P1-27
“Modification of Gold Surface via Microwave Irradiation Method”, Newaz Mohammed Bahadur, Takeshi Furusawa, Fumio Kurayama, Masahide Sato, Noboru Suzuki, Utsunomiya University, Japan

P1-28

P1-29
“Development of Microwave Selectively Activated Resins”, Lambert E. Feher, Dorothea Vinga Szabo, Sabine Schlabach, Forschungszentrum Karlsruhe, Germany

P1-30
“Microwave-Assisted Heating of Glucose in High-Boiling Solvent”, Akiyoshi Sasaki\textsuperscript{1)}, Masahide Sasaki\textsuperscript{1)}, Kenji Takahashi\textsuperscript{2)}, Atsushi Narumi\textsuperscript{6)}, Toshifumi Satoh\textsuperscript{6)}, Toyoji Kakuchi\textsuperscript{9)}, Harumi Kaga\textsuperscript{9)}, 1) National Institute of Advanced Industrial Science and Technology (AIST), Japan, 2) Kanazawa University, Japan, 3) Yamagata University, Japan, 4) Hokkaido University, Japan
2. Materials Processing

P2-01
“High Power Millimeter and Submillimeter Waves Sintering of Zirconia”, Yoshihisa Kobayashi¹, Tomoaki Nakano³, Seitaro Mitsuda⁴, Toshitaka Idehara⁴, Teruo Saito⁴, Saburo Sano², 1) University of Fukui, Japan, 2) National Institute of Advanced Industrial Science and Technology, Japan

P2-02
“Effects of Microwave Processing on Porosity”, David E Clark, Diane C Folz, Carlos E Folgar, Raghunath R Thiridandapani, Virginia Tech, USA

P2-03
“Effect of Impurities on Microwave Absorption Characteristic of Alumina Sintered Body”, Naoki Adachi, Kenji Tateishi, Yasuhiro Ibaraki, Sadataka Ito, Masatoshi Mizuno, Gifu Prefectural Ceramics Research Institute, Japan

P2-05
“The Effects of Microwave Heating on the Formation of SnO2 Thin Films Coated by Sol-Gel Method”, Takehiro Yonezawa, Yamato Hayashi, Hirotugu Takizawa, Tohoku Univ., Japan

P2-06
“Conversion of Natural Organic Resources into Valuable and Functional Materials Using Microwave Plasma Technique”, Yoshihide Watanabe, Shinji Itoh, Motoki Kobayashi, Kaoru Onoe, Chiba Institute of Technology, Japan

P2-07
“Synthesis of Nano Barium Titanate Using Microwave Process”, Dinesh Agrawal, Chiping Wang, Chris Yi Fang, Anton V Polotai, Michael Lanagan, 1) Pennsylvania State University, USA

P2-08
“Novel Tunable Ferroic and Meta-Materials Composites Using Microwave Processing”, Shashnk Agrawal, Jiping Cheng, Ruyan Guo, Dinesh K Agrawal, Amar S Bhalla, Pennsylvania State University, USA

P2-09
“Orientation Control of Layered BaFe₁₂O₁₉ Polycrystalline by Microwave Irradiation”, Toshiyuki Takayanagi, Yamato Hayashi, Hirotugu Takizawa, Tohoku Univ., Japan

P2-10
“Carbo-Thermal Reduction of NiO and Cr₂O₃ by Microwave Heating for Recycling Metals from Pickling Sludge”, Noboru Yoshikawa, Ken-ichi Mashiko, Etsuko Ishizuka, Shoji Taniguchi, Tohoku University, Japan

P2-11
“Microwave Fabrication of High Temperature Oxide and Non-Oxide Eutectics”, Anton V Polotai¹, Jiping Cheng³, Dinesh K Agrawal¹, Elizabeth C Dickey³, Sheldon Cytron², 1) the Pennsylvania State University, USA, 2) U.S. Army TACOM-ARDEC, USA

P2-12
“Microwave Processing of Electrode Layer on ZrO₂-based Electrolyte for Solid Oxide Fuel Cell”, Hiroyuki Nakayama, Motohide Matsuda, Michihiro Miyake, Okayama University, Japan

P2-13
“Microwave Sintering of B₄C Ceramics and Composites”, Jiping Cheng, Dinesh Agrawal, Yunjin Zhang, Pennsylvania State University, USA

P2-14
“Microwave Activated SHS for the Joining of SiCf/SiC Composites to Themselves and to SiC Matrix”, Paolo Veronesi¹, Anna Corradi¹, Cristina Leonelli¹, Roberto Rosa¹, Milena Salvo², Monica Ferraris², Valentina Casalegno², 1) University of Modena and Reggio Emilia, Italy, 2) Polytechnic of Turin, Italy

P2-15
“Microwave Sintering of Mullite Powders: Effect of MgO as a Sintering Aid”, Ruth H. G. A. Kiminami, Pollyane Marcia de Souto, Romuludo R. Menezes, Federal University of Sao Carlos, Brazil

P2-16
“Microwave Synthesis and Magnetic Properties of Spinel-Type ZnFe₂O₄”, Satomi Katayose, Yamato Hayashi, Hirotsugu Takizawa, Tohoku Univ., Japan

P2-17
“Microwave Heating Characteristic of Multilayered Structures in Single-Mode Cavity”, Ziping Cao, Zhanjie Wang, Noboru Yoshikawa, Shoji Taniguchi, Tohoku University, Japan

P2-18
“Investigation of Microwave Sintering on High Velocity Particle Consolidation Coatings”, Sinthu Chanthapan, Brent William Shoffner, Timothy Eden, Dinesh Agrawal, Pennsylvania State University, USA

P2-19
“Low-Temperature Processing of PZT Thin Films by 2.45 GHz Microwave Irradiation in Magnetic Field”, Zhan Jie Wang, Ziping Cao, Yuka Otsuka, Noboru Yoshikawa, Hiroyuki Kokawa, Shoji Taniguchi, Tohoku University, Japan

P2-20
“Measurement of Complex Permittivity with Heating by Open Ended Coaxial Applicator”, Tetsuyuki Michiyama, Yoshio Nikawa, Kokushikan University, Japan

P2-21
“Investigation of Microwave-Carbothermic Reduction of Magnetite with the Integrated Microscopic Imaging Spectrometer”, Akihiro Matsubara¹, Motoyasu Sato³, Sadatsugu Takayama³, Kazuya Nakayama¹, Takahiro Kaneda³, Katsumi Ida², Kazuhiro Nagata³, Shigeki Okajima¹, 1) Chubu University, Japan, 2) National Institute for Fusion Science, Japan, 3) Tokyo Institute of Technology, Japan

P2-22
“Microwave Curing of Aerospace and Automotive Composite Structures at HEPHAISTOS Experimental Centre (HEC)”, Lambert E. Feher¹, Volker Nuss³, Thomas Seitz¹, Jaleel Akhtar¹, Sebastijan Stanculovic¹, Christine Zoller¹, Stefan Layer¹, Manfred Thumm³, Reiner Wiesehofer², 1) Forschungszentrum Karlsruhe, Germany, 2) Votsch Industrietechnik GmbH, Germany

P2-23
“Analysis of Electric and Magnetic Field Distribution in a 915 MHz Single-Mode Microwave Applicator”, Guoqiang
Xie1), Motoharu Suzuki2), Dmitri V Louzguine-Luzgi1), Song Li1), Motohiko Tanaka2), Motoyasu Sato2), Akihisa Inoue3),
1) Tohoku University, Japan, 2) National Institute for Fusion Science, Japan

P2-24
“Raman Spectroscopy of ZnO Crystals under Microwave Irradiation”, Atsushi Ashida, Tetsuro Tsujino, Yonggu Shim,
Kazuki Wakita, Osaka Prefecture University, Japan

3. Biological, Medical and Environmental Applications

P3-01
“Cell Investigations Simultaneously with Exposure to 2.45 GHz Microwaves”, Diana Martin1), Sabin Cinca2), Irina
Margaritescu2), Monica Neagu4), Constantin Matei1), Nicusor Iacob3), Daniel Ighigeanu3), Gabriela Craciun1), Elena
Manaila1), Doru Chirita1), Mihaela Moisescu3), 1) National Institute for Lasers, Plasma and Radiation Physics, Romania,
2) Oncology Institute ‘A. Trestioreanu’, Romania, 3) Military Clinical Hospital ‘Carol Davila’, Romania, 4) National
Institute Victor Babes’, Romania, 5) University of Human Medicine and Pharmacy ‘Carol Davila’, Romania

P3-02
“SO2 and NOx Removal by Microwave and Electron Beam Processing”, Daniel Ighigeanu3), Ioan Calinescu2), Diana
Martin1), Constantin Matei1), Anca Bulearca2), A. Ighigeanu3), 1) National Institute for Lasers, Plasma and Radiation
Physics, Romania, 2) Polytechnic University, Romania, 3) SC Optoelectronica-2001 SA, Romania

P3-03
“Formation of Anhydroglucose from Polysaccharide in Ionic Liquids by Microwave Irradiation”, Momoko Hayashi1),
Hiroe Satoh1), Toshifumi Satoh2), Toyoyo Kakuchi3), Harumi Kaga3), Kenji Takahashi3), 1) Kanazawa University, Japan,
2) Hokkaido University, Japan, 3) National Institute of Advanced Industrial Science and Technology (AIST), Japan

P3-04
“Solubilization of Barley Malt Feed by Microwave Heating in Water”, Jun-ichi Azuma1), Keigo Okahara1), Masahiro
Sakamoto3), Takumi Kono3), Hiderou Nomoto3), Masakazu Higuchi3), 1) Kyoto University, Japan, 2) Nippon Steel
Chemical Co., Ltd, Japan

P3-05
“Feasibility Study on Microwave Induced Gasification of Waste Glycerol”, Duangduen Atong3), Yotwadee
Hawangchu5), Viboon Sriraroenchaikul5), 1) National Metal and Material Technology Center, Thailand, 2) Chulalongkorn
University, Thailand

P3-06
“Combined Microwave and Electron Beam Exposure Facilities for Medical Studies and Applications”, Diana Martin3),
Sabin Cinca2), Irina Margaritescu3), Monica Neagu6), Nicusor Iacob3), Daniel Ighigeanu3), Constantin Matei3), Gabriela
Craciun1), Elena Manaila1), Doru Chirita3), Mihaela Moisescu3), 1) National Institute for Lasers, Plasma and Radiation
Physics, Romania, 2) Oncology Institute ‘A. Trestioreanu’, Romania, 3) Military Clinical Hospital ‘Carol Davila’,
Romania, 4) National Institute Victor Babes’, Romania, 5) University of Human Medicine and Pharmacy ‘Carol
Davila’, Romania

P3-07
“Vaccine Preparation by Radiation Processing”, Gabriela Craciun1), Diana Martin3), Iulian Togoe2), Laurentiu Tudor2),
Elena Manaila1), Daniel Ighigeanu3), Constantin Matei3), 1) National Institute for Lasers, Plasma and Radiation Physics,
Romania, 2) Agriculture and Veterinary Medicine University, Romania

P3-08
“Utilization of Microwave Heating for Production of Plant Biopolyester from Black Tea Residue”, Shuntaro Tsubaki, Hiroaki Iida, Masahiro Sakamoto, Jun-ichi Azuma, Kyoto University, Japan

P3-09
“Hydrolysis Extraction of Amino Acid from Leather under Microwave-Ionic Liquid System”, Renlong Liu, Yuzhen Wang, Zuohua Liu, Qingcai Liu, Chongqing University, China

P3-10
“Oligosaccharides Adsorbed on Activated Charcoal Powder Escaped from Hydrolysis by Microwave Heating in Water”, Akikazu Matsumoto, Shuntaro Tsubaki, Masahiro Sakamoto, Jun-ichi Azuma, Kyoto University, Japan

P3-11
“Microwave-Basic Catalyzed Degradation of PET: Effects of Contamination and Scale-Up”, Kazutoshi Ikenaga, Takashi Sekine, Yoshino Ogasawara, Yasuhiro Hirano, Hirotaka Oyama, Sojo University, Japan

P3-12
“Microwave Irradiated Rolling Circle Amplification by Temperature Control of Single Mode”, Takeo Yoshimura, Shokichi Ohuchi, Kyushu Institute of Technology, Japan

P3-13
“Focusing Applicator for Microwave Heating”, Seiji Maruoka, Yoshio Nikawa, Kokushikan University, Japan

P3-14
“Microwave Diagnosis Based on MRI Imaging”, Yoshihiko Nakawa, Masahiro Nishio, Kokushukan University, Japan

P3-15
“Application of Microwave in Soil Treatment Technology”, Cheng Mei, Jianjian Wei, Nagesh JieQuan Microwave Equipment Co., LTD, China

P3-16
“Microwave Vacuum Drying of Fruits & Vegetables”, Peter Puschner, Louise Loh Siok Hoon, PÜSCHNER GMBH + CO KG, Germany

4. System and Applications

P4-01
“Novel Chemical Reaction Development with Microwave Discharge Plasma under Ultrasonic Cavitation in Solution”, Satoshi Horikoshi1), Susumu Sato2), Yasuhiro Mitsui2), Nick Serpone3), Masahiko Abe4), 1) Tokyo University of Science, Japan, 2) ARIOS Inc, Japan, 3) Mitsui Electric Co., Ltd., Japan 4) University of Pavia, Italy

P4-02
“Development of DNP-NMR Measurement System with High Power X-band and THz Waves”, Yutaka Fuji1), Mitsuru Toda1), Seitaro Mitsudo1), Isamu Ogawa1), Toshinaka Idehara1), Teruo Saito1), Hidetada Ito1), Yuya Shimizu1), Meiro Chiba1), 1) University of Fukui, Japan, 2) JEOL Ltd., Japan

P4-03
“Optimization of Element Arrangement for Metamaterial”, Takayuki Takase, Yoshio Nakawa, Kokushikan University, Japan

P4-04
“Microwave Visualizing Equipment Using Miniature Loop Array”, Yoshio Nikawa, Takayuki Takase, Kokushikan University, Japan

P4-05
“Measurement of Permittivity and Permeability for EM Applicable Catalyst”, Yuki Ozone1, Nobuyuki Kikukawa2, Yoshinobu Nagano3, Satoru Kobayashi2, Yoshio Nikawa1, 1) Kokushikan University, Japan, 2) National Institute of Advanced Industrial Science and Technology, Japan, 3) Environment Technology Ventures, Inc., Japan

P4-06
“Lossy Dry Model to Evaluate EM Field Distribution in a Microwave Applicator”, Hiroyasu Matsuoka, Yoshio Nikawa, Kokushikan University, Japan

P4-07
“Development of Flow-Type Microwave Reactor Using a Cylindrical Single-Mode Cavity”, Masateru Nishioka1, Tadashi Okamoto2, Masahiro Yasuda2, Hiromochi Odajima2, Makoto Kasai1, Ko-ichi Sato1, Satoshi Hamakawa1, 1) National Institute of Advanced Science and Technology (AIST), Japan, 2) IDX corporation, Japan

5. Theory and Measurements

P5-01
“Effect of Pressure on Microwave Susceptibility”, Jacqueline M. R. Belanger1, J. R. Jocelyn Pare1, Craig Fairbridge2, 1) Environment Canada, Canada, 2) Natural Resources Canada, Canada

P5-02
“Dielectric Properties and Thermal Conductivity of Silicon Nitrides Pressureless Sintered with Yb2O3 and MgO as Sintering Additives”, Hiroyuki Miyazaki, Yu-ichi Yoshizawa, Kiyoshi Hirao, National Institute of Advanced Industrial Science and Technology (AIST), Japan

P5-03
“Heating Patterns of Microwave Exposed Liquid Polymers”, Vyacheslav V. Komarov1, Manfred Thumnn2, Lambert Feher2, Jaleel Akhtar2, 1) Saratov State Technical University, Russia, 2) IHM-Forschungszentrum Karlsruhe GmbH, Germany

P5-04
“Modeling of Nonuniform Layers with Known Microwave Reflection on Transmission Factors”, Igor V Bychkov, V. N. Yemets, V. D. Buchelnikov, Chelyabinsk State University, Russia

P5-05
“Power Balance and Thermal Fields Study in Double-Horn Microwave Heating Set-Up”, Vyacheslav V. Komarov1, Frank Liu2, Frank Younce2, Juming Tang2, 1) Saratov State Technical University, Russia, 2) Washington State University, USA

P5-06
“Fluorescence Lifetime and Molecular Rotational Motion under Microwave Irradiation”, Shutaro Nagaya1, Ai Konishi1, Harumi Kaga2, Kenji Takahashi1, 1) Kanazawa University, Japan, 2) National Institute of Advanced Industrial Science and Technology (AIST), Japan

P5-07
“Electromagnetic Design and Choking of Continuous Industrial Microwave Applicators”, Georgios Dimitrakis1, Samuel Kingman1, Carien Fuche2, Renier Marchand3, Steven Bradshaw2, 1) University of Nottingham, UK, 2) University of
6. Industrial Applications

P6-01
“Rapid Strong Microwave Radiation by a Non-Competitive Neighbor Mode in a Gigawatt-Class Pulsed Magnetically Insulated Line Oscillator”, Dae-Ho Kim, Sun-Shin Jung, Korea Electrotechnology Research Institute, Korea

P6-02
“Three-Dimensional Particle-in-Cell Simulations on a Mismatched Magnetron Oscillator”, Dae-Ho Kim, Sun-Shin Jung, Yoon-Cheol Ha, Korea Electrotechnology Research Institute, Korea

P6-03
“A Frequency Tunable Gyrotron, Gyrotron FU CW IV”, Shinichiro Kobayashi1), Isamu Ogawa1), Toshitaka Idehara1), Tsun-Hsu Chang2), Teruo Saito3), 1) University of Fukui, Japan, 2) National Tsing Hua University, China

P6-04
“Novel Microwave Plasma Enhanced Chemical Vapor Deposition Equipment for the Preparation of Diamond-Like Carbon Films”, Jianhua Wang1), Tianren Ji2), Liwei Xiong1), Weidong Man1), Peng Xie1), 1) Wuhan Institute of Technology, China, 2) University of Electronic Science and Technology of China, China

P6-05
“Mechanical Property of Green Body Prepared by Microwave-Assisted Surface Hydration Reaction”, Takashi Shirai, Masaki Yasuoka, Yoshiaki Kinemuchi, Yuji Hotta, Koji Watari, National Institute of Advanced Industrial Science and Technology (AIST), Japan

P6-06
“Development of Plasma Source in Water”, Kunihiko Mori, Susumu Sato, Makoto Ishizashi, Osamu Ariyada, ARIOS INC., Japan

P6-07
“An Industrial Microwave-Assisted Process and Associated Applicator for the Conversion of Ethane to Ethylene”, Jacqueline M. R. Belanger1), J. R. Jocelyn Pare1), Craig Fairbridge2), Ankam Bhaskar1), Sateesh Mutyala1), Siauw Ng3), Randall Hawkins1), Adam Pawilan1), 1) Environment Canada, Canada, 2) Natural Resources Canada, Canada

P6-08
“Influences of Stir and Viscosity Coefficient on the Formation of Hotspots During Microwave Heating”, Xiaqing Yang, Kama Huang, Guozhu Jia, Sichuan University, China

P6-09
“Optimization and Validation of an Applicator for Wood Disinfections by Microwaves”, Angela Tatiana Zona, Leila Landazabal, Oneira Calderon, Juan Vicente, Luis Nuno, Elias de los Reyes, Polytechnic University of Valencia, Spain

P6-10
“Industrial Microwave Exfoliation of Vermiculite”, Sam kingman, Chris Dodds, Georgios Dimitrakis, George Rice, 1) University of Nottingham, UK
**P6-11**
“Biomass for Microwave Assisted Steel Production”, Thorsten Gerdes, Monika Willert-Porada, Johannes Thiessen, *University of Bayreuth, Germany*

**P6-12**
“Phase-and-Amplitude-Controlled Magnetron and Its Application for Microwave Heating”, Tomohiko Mitani, Naoki Shinohara*, Kyoto University, Japan

**P6-13**
“Microwave Heating of Organic Liquids in TM_{010} Cylindrical Cavity”, Jun-ichi Sugiyama¹, Tadashi Okamoto², Masahiro Yasuda², 1) AIST, Japan, 2) IDX Co. Ltd., Japan

**7. Other Related Topics**

**P7-01**
“Heating Characteristics of Iron/Iron-Oxide Compound by Microwave”, Nobuhiro Nishino, Shingo Sakurada, Tomoko Maeda, Takahide Takeuchi, Akira Tashiro, *Hiroshima University, Japan*

**update history (continued from top page)**

May 30, 2008; edit typos
- rearrange Workshop II
- add 4 posters

June 9, 2008; edit typos
- rearrange Short Course
  - (change 1 lecture and add 1 lecture)
- add 1 poster

June 19, 2008; major corrections for fixed version
- edit typos
- add details of Plenary Session by MGW and IMPI
- add details of Workshop I
- correct titles and authors refer to submitted manuscripts of proceedings

June 30, 2008; edit typos
- add name of session chairs

July 2, 2008; edit typos
- replace oral presentations (O6-11 with O6-16)

July 3, 2008; edit typos
- move a few oral presentations and chairs to solve conflicts

July 7, 2008; edit typos
- move few chairs to solve conflicts