

C-1 Nanostructured and Nanocomposite Materials

Representative Organizer

Takayuki WATANABE (Kyushu University)

Co-organizers

Yasunori TANAKA (Kanazawa University)

Masaya SHIGETA (Osaka University)

Manabu TANAKA (Kyushu University)

Oral Session 1 March 27 (Fri.) Room 4

Chair : Takayuki Watanabe (Kyushu University)

- 13:00 C1-I-01 **Modelling of Fume Formation in Welding Arcs** [Invited Lecture]
¹Anthony B Murphy, ²Shinichi Tashiro, ²Manabu Tanaka
1 CSIRO MANUFACTURING FLAGSHIP
2 JOINING AND WELDING RESEARCH INSTITUTE, OSAKA UNIVERSITY
- 13:30 C1-I-02 **Nano Structured Hybrid of Polymer, Poly(dopamine), Metal, and Graphite** [Invited Lecture]
¹Seong In Kim, ¹WS Choi, ²Haeshin Lee
1 CHEORWON PLASMA RESEARCH INSTITUTE
2 KAIST, DEPARTMENT OF CHEMISTRY
- 14:00 C1-O-01 **Numerical Investigation of Axial Magnetic Field Effect on Nanopowder Formation Around a Thermal Plasma Jet**
Masaya Shigeta
JOINING AND WELDING RESEARCH INSTITUTE, OSAKA UNIVERSITY
- 14:15 C1-O-02 **Feedstock Evaporation and Precursor Formation in TiO₂ Nanoparticle Synthesis Process in Pulse-Modulated Induction Thermal Plasmas Torch**
¹Naoto Kodama, ¹Kentaro Kita, ¹Yasunori Tanaka, ¹Yoshihiko Uesugi, ¹Tatsuo Ishijima, ²Shu Watanabe, ²Keitaro Nakamura
1 KANAZAWA UNIVERSITY
2 RESEARCH CENTER FOR PRODUCTION & TECHNOLOGY, NISSHIN SEIFUN GROUP INC.
- 14:30 C1-O-03 **Synthesis of Silicon Composite Nanoparticles by Induction Thermal Plasmas**
Hiroataka Sone, Daisuke Okamoto, Takuya Kageyama, Manabu Tanaka, Takayuki Watanabe
DEPARTMENT OF CHEMICAL ENGINEERING, KYUSHU UNIVERSITY
- 14:45 **Break**
- Chair : Seong In Kim (Cheorwon Plasma Research Institute)
- 15:00 C1-O-04 **Numerical and Experimental Study on Radio Frequency Induction Thermal Plasma Treatment of Ni and Metal Oxide Powders for Synthesis of Nanocatalyst**
Jun Seok Nam, Mi-Yeon Lee, Jeong-Soo Kim, Dong Uk Kim, Min-Ho Kim, Jun-Ho Seo
DEPARTMENT OF QUANTUM SYSTEM ENGINEERING, CHONBUK NATIONAL UNIVERSITY
- 15:15 C1-O-05 **Amine Functionalized SiO_x Films Prepared by Atmospheric Pressure Plasma Jet (APPJ) for the Promotion of Biocompatibility**
Yu-Chun Lin, Meng-Jiy Wang
DEPARTMENT OF CHEMICAL ENGINEERING, NATIONAL TAIWAN UNIVERSITY OF SCIENCE AND TECHNOLOGY
- 15:30 C1-O-06 **Nanoparticles of Sulfur Plasma-Chemical Synthesis**
Kamil Sadikov
KAZAN FEDERAL UNIVERSITY

- 15:45 C1-O-07 **Synthesis of Silver Nanoparticles Using Plasma-Liquid Interactions**
¹Ying Li Thong, ¹Oi Hoong Chin, ²Boon Hoong Ong, ¹Nay Ming Huang
1 DEPARTMENT OF PHYSICS, UNIVERSITY OF MALAYA
2 NANOTECHNOLOGY AND CATALYSIS RESEARCH CENTRE, UNIVERSITY OF MALAYA
- 16:00 C1-O-08 **Improvement on Wear Resistance Property of Polyurethane Film by Compositing Plasma-Treated Multi-Walled Carbon Nanotubes**
Daisuke Ogawa, Keiji Nakamura
COLLEGE OF ENGINEERING, CHUBU UNIVERSITY
- 16:15 C1-O-09 **Electrostatic Interaction of Gold Nanoparticles on Spatial Patterned Self-Assembly Monolayer Based on Vacuum Ultra-Violet Lithography**
Jeonghyeon Yang, Takashi Ichii, Kuniaki Murase, Hiroyuki Sugimura
DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING, KYOTO UNIVERSITY
- 16:30 C1-O-10 **Synergistic Role of Selective Plasma Treated Carbon Nanotubes for Highly Reinforced Polymer Nanocomposites**
¹Sunanda Roy, ²Tanya Das, ¹Xiao Hu
1 SCHOOL OF MATERIALS SCIENCE AND ENGINEERING, NANYANG TECHNOLOGICAL UNIVERSITY
2 SCHOOL OF MECHANICAL AND AEROSPACE ENGINEERING, NANYANG TECHNOLOGICAL UNIVERSITY

Oral Session 2 March 28 (Sat.) Room 4

Chair : Masaya Shigeta (Osaka University)

- 8:50 C1-O-11 **Ionic Sensors Fabricated by Hydrothermal ZnO Nanostructures**
¹Jhih-Ren Yang, ¹Tsang-Yen Hsieh, ^{2,3}Pi-Chun Juan, ^{1,3}Jyh-Liang Wang
1 DEPARTMENT OF ELECTRONIC ENGINEERING, MING CHI UNIVERSITY OF TECHNOLOGY
2 DEPARTMENT OF MATERIALS ENGINEERING
3 CENTER FOR THIN FILM TECHNOLOGIES AND APPLICATIONS, MING CHI UNIVERSITY OF TECHNOLOGY
- 9:05 C1-O-12 **Performance Analysis of Electrophorically Deposited ZnO Based Dye-Sensitized Solar Cell Using Heat and Pressure Technique**
^{1,2,3}Mohammad Shamimul Haque Choudhury, ¹Naoki Kishi, ¹Tetsuo Soga
1 DEPARTMENT OF FRONTIER MATERIAL, NAGOYA INSTITUTE OF TECHNOLOGY
2 INTERNATIONAL ISLAMIC UNIVERSITY CHITTAGONG
3 BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY
- 9:20 C1-O-13 **Comparison of ZnO Nanorods Growth on ZnO Doped and Co-Doped Seeded Layer Prepared by Sol Gel Method**
^{1,2,3,4}Ruziana binti Mohamed, ^{3,4}Mohamad Firdaus bin Malek, ^{2,3}Zuraida binti Khusaimi, ^{3,4}Mohamad Hafiz bin Mamat, ⁴Tetsuo Soga, ^{3,4}Mohamad Rusop bin Mahmood
1 FACULTY OF APPLIED SCIENCE, UNIVERSITI TEKNOLOGI MARA
2 NANO-ELECTRONIC CENTRE, FACULTY OF ELECTRICAL ENGINEERING, UNIVERSITI TEKNOLOGI MARA
3 NA NO-SCITECH CENTRE, INSTITUTE OF SCIENCE, UNIVERSITI TEKNOLOGI MARA
4 NAGOYA INSTITUTE OF TECHNOLOGY
- 9:35 C1-O-14 **Visible Light Photodetection of Porous ZnO Nanowires Grown by Hydrothermal Method**
Jr-Ting Lin, Chuan-Pu Liu
DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING, NATIONAL CHENG KUNG UNIVERSITY
- 9:50 C1-O-15 **Immobilization of Ag-Deposited Au Nanoprisms by Thiol-Coupling and Oil-Coating Methods**
Yuta Noda, Tomokatsu Hayakawa
DEPARTMENT OF FRONTIER MATERIALS, NAGOYA INSTITUTE OF TECHNOLOGY
- 10:05 C1-O-16 **Improving High Resistance State (HRS) Uniformity and Leakage Current for PI-Based Resistive Switching Memory by Rubbing Treatment**
¹Wen-Luh Yang, ²Yu-Ping Hsiao, ²Li-Min Lin, ²Fun-Tat Chin, ³Ke-Luen Yang
1 DEPARTMENT OF ELECTRONIC ENGINEERING, FENG CHIA UNIVERSITY
2 PH.D. PROGRAM OF ELECTRICAL AND COMMUNICATIONS ENGINEERING, FENG CHIA UNIVERSITY
3 DAXIN MATERIALS CORPORATION

Chair : Anthony B Murphy (CSIRO)

13:00 C1-I-03 **Development of Nano-Composite Si Particles by Plasma Spraying for Negative Electrode of Lithium Ion Batteries** [Invited Lecture]

¹Makoto Kambara, ¹Yutaro Ohta, ¹Mashiro Kaga, ¹Tasuku Hideshima, ²Noriaki Sano

¹ DEPARTMENT OF MATERIALS ENGINEERING, THE UNIVERSITY OF TOKYO

² DEPARTMENT OF CHEMICAL ENGINEERING, KYOTO UNIVERSITY

13:30 C1-O-17 **Charge of Dust Particles in Plasma Etching Apparatus During Plasma-Discharge Interval**

Hiroyuki Kobayashi, Kenji Maeda

CENTRAL RESEARCH LABORATORY, HITACHI, LTD.

13:45 C1-O-18 **Influence of GaN Nanorod Top Shape and Diameter on the Growth of Lattice-Matched In_xAl_{1-x}N/GaN Nanorods by Magnetron Sputter Epitaxy**

Elena Alexandra Serban, Justinas Palisaitis, Per O.Å Persson, Iuliana Poenaru, Muhammad Junaid, Lars Hultman, Jens Birch, Ching-Lien Hsiao

THIN FILM PHYSICS DIVISION, DEPARTMENT OF PHYSICS, CHEMISTRY AND BIOLOGY (IFM), LINKÖPING UNIVERSITY

14:00 C1-O-19 **Multi-Directional Slanted Plasma Etching of Silicon**

Jun-Hyun Kim, Sung-Woon Cho, Chang-Koo Kim

DEPARTMENT OF CHEMICAL ENGINEERING AND DEPARTMENT OF ENERGY SYSTEMS RESEARCH, AJOU UNIVERSITY

14:15 C1-O-20 **Strengthening of Duplex Hard Coatings with Additional Ion Implantation**

Branko Skorjoc, Aleksandar Miletic, Pal Terek

DEPARTMENT OF PRODUCTION ENGINEERING, FACULTY OF TECHNICAL SCIENCES, UNIVERSITY OF NOVI SAD

14:30 C1-O-21 **Composite Materials Obtained by the Ion-Plasma Sputtering of Metal Compound Coatings on Polymer Films**

^{1,2}Nikolai Aleksandrovich Khlebnikov, ¹Evgenii Valentinovich Polyakov, ¹Sergei Vladimirovich Borisov, ¹Oleg Pavlovich Shepatkovskii, ²Anastasia Alekseevna Maltseva, ²Artem Olegovich Vereshchagin, Stas Viktorovich Khartov

¹ INSTITUTE OF SOLID STATE CHEMISTRY, URAL BRANCH, RUSSIAN ACADEMY OF SCIENCES

² URAL FEDERAL UNIVERSITY NAMED AFTER THE FIRST PRESIDENT OF RUSSIA B. N. YELTSIN

14:45 Break

Chair : Yasunori Tanaka (Kanazawa University)

15:00 C1-O-22 **Carbon Nanofiber as a Tool for Atomic Force Microscope Nanolithography**

¹Gemma Rius, ²Matteo Lorenzoni, ¹Soichiro Matsui, ¹Masaki Tanemura, ²Francesc Perez-Murano

¹ NAGOYA INSTITUTE OF TECHNOLOGY (NITECH)

² INSTITUTE OF MICROELECTRONICS OF BARCELONA (IMB-CNM-CSIC)

15:15 C1-O-23 **Effect of Oxygen Addition on the Synthesis and Layer Number Control of Graphene by Chemical Vapor Deposition**

Yu-Ching Chou, Chien-Kuo Hsieh

DEPARTMENT OF MATERIALS ENGINEERING, MING CHI UNIVERSITY OF TECHNOLOGY

15:30 C1-O-24 **Preparation of “Micro-Fluidic Amperometric Sensor (MFAS)” by Integrating Ag@Carbon Nanotubes on Carbon Electrode**

Yen Hsiang Huang, Meng Jiy Wang

DEPARTMENT OF CHEMICAL ENGINEERING, NATIONAL TAIWAN UNIVERSITY OF SCIENCE AND TECHNOLOGY

15:45 C1-O-25 **The Synthesis of Carbon Nanotube/Three Dimensional Graphene as a Hybrid Nanostructure for High Performance Supercapacitors**

¹Wei Jie Chen, ¹Che Hsien Lin, ¹Chuen Horng Tsai, ²Chien Kuo Hsieh

¹ DEPARTMENT OF ENGINEERING AND SYSTEM SCIENCE, NATIONAL TSING HUA UNIVERSITY

² DEPARTMENT OF MATERIALS ENGINEERING, MING CHI UNIVERSITY OF TECHNOLOGY

- 16:00 C1-O-26 **Electrochemical Detection of Uric Acid on Carbon Nanotube Directly Grown onto Si Wafer in Ascorbic Acid and Dopamine**
¹Yi-Ting Shih, ¹Kuei-Yi Lee, ²Chung-Kuang Lin
1 GRADUATE INSTITUTE OF ELECTRO-OPTICAL ENGINEERING, NATIONAL TAIWAN UNIVERSITY OF SCIENCE AND TECHNOLOGY
2 CARDIOVASCULAR DEPARTMENT, YUNG-MING BRANCH, TAIPEI CITY HOSPITAL
- 16:15 C1-O-27 **Plasma Enhanced DNAs Optical Sensor Utilizing Quantum Dots as Sensing Media**
Fei Zhao, Jong Sung Kim
DEPARTMENT OF CHEMICAL AND BIOLOGICAL ENGINEERING, GACHON UNIVERSITY
- 16:30 C1-O-28 **Polydopamine-Coated Surfaces and Nanoparticles as Vectors for Antibacterial, Anti-Cancer and Diagnostics Applications.**
Gil Yeroslavsky, Shai Rahimipour
DEPARTMENT OF CHEMISTRY, BAR-ILAN UNIVERSITY