Symposium 5:  Hybrid and Nano-Structured Materials

Main Organizers
- Tohru Sekino, Tohoku University, Japan
- Yoko Suyama, Shimane University, Japan
- Dileep Singh, Argonne National Laboratory, USA
- Igor L. Shabalin, The University of Salford, UK

Co-Organizers
- Fritz Aldinger, Max-Planck Institute, Germany
- Bikramjit Basu, Indian Institute of Technology Kanpur, India
- Anna Biedunkiewicz, West Pomeranian University of Technology, Poland
- Yong Ho Choa, Hanyang University, Korea
- Dominguez-Rodriguez, University of Seville, Spain
- Lian Gao, Shanghai Institute of Ceramics, China
- George Gnesin, Institute for Problems of Materials Science, Ukraine
- Yury Gogotsi, Drexel University, USA
- John Halloran, University of Michigan, USA
- Junichi Hojo, Kyushu University, Japan
- Kwang Ho Kim, Pusan National University, Korea
- Walter Krenkel, University of Bayreuth, Germany
- Ashok Kumar, University of South Florida, USA
- Koji Kuraoka, Kobe University, Japan
- Takafumi Kusunose, Osaka University, Japan
- Anatoly Lanin, Scientific Institute of Atomic Energy, Russia
- Yoshitake Masuda, AIST, Japan
- Sanjay Mathur, University of Cologne, Germany
- Arniya K. Mukherjee, University of California Davis, USA
- Hiroyuki Nakamura, AIST, Japan
- Hiromi Nakano, Toyohashi University of Technology, Japan
- Tadachika Nakayama, Nagaoka University of Technology, Japan
- Roger Naslain, University of Bordeaux I, France
- Jules Routbort, Argonne National Lab, USA
- Noriko Saito, NIMS, Japan
- Mrityunjay Singh, NASA Glenn Research Center, USA
- Wei-Hsing Tuan, National Taiwan University, Taiwan
- Petr Vityaz, National Academy of Science, Belarus
- Hao Wang, Wuhan University of Technology, China
- Houzheng Wu, Loughborough University, UK
- Yanchun Zhou, Institute of Metal Research, China

Oral Session

Monday, November 15
Room: 1003

14:15 - 16:00: Nanocomposites and Multi-Dimensional Fibers/Fabrics Reinforced CMCs
Chairs: Jules Routbort (Argonne National Lab., USA) and Tohru Sekino (Tohoku University, Japan)

14:15 - 14:45
S5-001  Hybrid Ceramic Matrix Fibrous Composites: an Overview (Invited)
  R. Naslain: University of Bordeaux, France

14:45 - 15:15
S5-002  Hybrid Nanostructured Ceramic Matrix Composites through Solution Route (Invited)
  L. M. Manocha, S. Manocha, M. Vyas, P. M. Raole; Sardar Patel University, India
Symposium 5

15:15 - 15:30
S5-003  Hierarchical SiC-based Ceramic Matrix Composites Reinforced with SiC Nanowires Grafted Carbon Fibers
B. Lu, S. M. Dong, Z. Wang, X. Y. Zhang, Y. S. Ding; Chinese Academy of Sciences, China

S5-004  Cancelled

15:30 - 16:00
S5-005  Nanoscale Plasticity in Ceramics and Semiconductors Revised (Invited)
R. Nowak¹,², D. Chrobak¹,², M. Berg³, T. Sekino³, K. Niihara⁴; ¹Aalto University, Finland, ²Nagaoka University of Technology, Japan, ³Hysitron, Inc., USA, ⁴Tohoku University, Japan

16:00 - 16:15  Break

16:15 - 18:00: Materials Design, Novel Synthesis and Processing Technology (I)
Chairs: Katherine Faber (Northwestern University, USA) and Lian Gao (Shanghai Institute of Ceramics, China)

16:15 - 16:45
S5-006  Microreactor Synthesis Toward Rapid Developments of Nanoparticles (Invited)
H. Nakamura¹, M. Uehara¹, H. Maeda¹,²,³; ¹National Institute of Advanced Industrial Science and Technology, Japan, ²Kyushu University, Japan, ³Japan Science and Technology Agency, Japan

S5-007  Nano-Ceramics as Additives for Heat Transfer Fluids (Invited)
J. L. Routbort, D. Singh, E. Timofeeva, W. Yu, D. France; Argonne National Laboratory, USA

17:15 - 17:30
S5-008  Development of Automatic Combinatorial System for Synthesis of Nanoparticles Using Microreactors
K. Watanabe¹, H. Ozono¹, K. Yamashita², M. Uehara², H. Nakamura², H. Maeda¹,²,³; ¹Kyushu University, Japan, ²National Institute of Advanced Industrial Science and Technology, Japan, ³Japan Science and Technology Agency, Japan

S5-009  Property Control of Semiconductor Nanocrystals by Controlling the Temperature Profile Using Microreactor
C. G. Lee¹, H. Nakamura¹, M. Uehara¹, H. Maeda¹,²,³; ¹National Institute of Advanced Industrial Science and Technology, Japan, ²Kyushu University, Japan, ³Japan Science and Technology Agency, Japan

S5-010  Selective Pulsed Heating for Synthesizing Semiconductor and Metal Submicron Spheres Based on Pulsed Laser Irradiation of Colloidal Nanoparticles
H. Wang, A. Pyatenko, K. Kawaguchi, X. Li, Z. Swiatkowska-Warkocka, N. Koshizaki; National Institute of Advanced Industrial Science and Technology, Japan

Tuesday, November 16

Room: 1003

9:00 - 10:30: Coalescence, Growth and Sintering Behavior
Chairs: Dileep Singh (Argonne National Lab., USA) and Jing Sun (Shanghai Institute of Ceramics, China)

9:00 - 9:30
S5-011  Application of Ultra Accelerated Quantum Chemical Molecular Dynamics to the Study of the Sintering Mechanism (Highlighted Oral)
A. Suzuki, R. Miura, H. Tsuboi, N. Hatakeyama, A. Endou, H. Takaba, A. Miyamoto; Tohoku University, Japan
<table>
<thead>
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<th>Time</th>
<th>Session</th>
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<th>Authors/Institutions</th>
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<tr>
<td>9:30 - 9:45</td>
<td>S5-012</td>
<td>Processing and Properties of Nanostructured YSZ Ceramics Produced by Dry Pressing</td>
<td>J. Binner¹, B. Vaidyanathan¹, K. Annapoorani¹, H. Hodgson²; ¹Loughborough University, UK, ²Dynamic Ceramic Ltd, Crewe, UK</td>
</tr>
<tr>
<td>9:45 - 10:00</td>
<td>S5-013</td>
<td>Lower Sintering Temperature of Nanostructured Dense Ceramics Compacted from Dry Nanopowders Using Powerful Ultrasonic Action</td>
<td>O. Khasanov¹, U. Reiche², E. Devlis¹, A. Khasanov¹; ¹Nano-Centre of Tomsk Polytechnic University, Russia, ²Fraunhofer-Institut für Keramische Technologien und Systeme, Germany</td>
</tr>
<tr>
<td>10:00 - 10:15</td>
<td>S5-014</td>
<td>SPS Synthesis/Consolidation of TiAIN-Based Nano-Composite Reinforced with Homogeneously Distributed Cubic Aluminum Nitride Nanocrystals</td>
<td>B. Hanna¹², V. Oleg³, S. Yoshio³, S. Liap³, T. Y. Kwang³, M. Jan³; ¹National Institute for Materials Science, Japan, ²NASU, Ukraine, ³Nanyang Technological University, Singapore</td>
</tr>
<tr>
<td>10:15 - 10:30</td>
<td>S5-015</td>
<td>Study on Alkali and Alkaline Earth Cations Stabilized Sialon Translucent Ceramics</td>
<td>H. Wang¹, Z. Yang³, W. Wang, Z. Fu¹, S.-W. Lee³, K. Nihara³; ¹Wuhan University of Technology, China, ³SunMoon University, Korea, ³Nagaoka University of Technology, Japan</td>
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<tr>
<td>10:45 - 11:45</td>
<td></td>
<td>Organic-Inorganic Hybrids (I)</td>
<td>Chairs: Yoko Suyama (Shimane University, Japan) and Ryo Sasai (Shimane University, Japan)</td>
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<td>10:45 - 11:15</td>
<td>S5-016</td>
<td>Preparation of Silica/Modified Poly(Vinyl Alcohol) Organic-Inorganic Hybrid Gas Barrier Films by Sol-Gel Method with Microwave Irradiation (Invited)</td>
<td>K. Kuraoka, H. Ashihara, A. Hashimoto; Kobe University, Japan</td>
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<tr>
<td>11:15-11:30</td>
<td>S5-017</td>
<td>Processing and Dielectric Properties of Polyhedral Oligomeric Silsesquioxane (POSS)-Based Nanocomposites</td>
<td>M.-J. Pan, E. P. Gorzkowski; U.S. Naval Research Laboratory, USA</td>
</tr>
<tr>
<td>11:30-11:45</td>
<td>S5-018</td>
<td>Processes and Applications of Silicon Carbide Nanocomposite Fibers</td>
<td>D.-G. Shin¹, K.-Y. Cho¹, D.-H. Riu²; ¹Korea Institute of Ceramic Engineering and Technology, Korea, ²Seoul National University of Technology, Korea</td>
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<tr>
<td>14:15 - 16:00</td>
<td></td>
<td>Organic-Inorganic Hybrids (II)</td>
<td>Chairs: Koji Kuraoka (Kobe University, Japan) and Lalit Mohan Manocha (Sardar Patel University, India)</td>
</tr>
<tr>
<td>14:15 - 14:45</td>
<td>S5-019</td>
<td>Molecular Sensing Ability of Layered Inorganic/Luminous Organic Nano-hybrid Solid Materials (Invited)</td>
<td>R. Sasai; Shimane University, Japan</td>
</tr>
<tr>
<td>14:45 - 15:15</td>
<td>S5-020</td>
<td>Preparation of a Novel Core/shell Structured TiO₂-Polyaniline Nanocomposite and its Application to Solar Cell</td>
<td>S. Yang, Y. Ishikawa, Q. Feng; Kagawa University, Japan</td>
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<td>15:15 - 15:30</td>
<td>S5-021</td>
<td>Preparing Transparent Conductive SWNT Films Using Biomolecules as Surfactants (Highlighted Oral)</td>
<td>J. Sun, R. Wang, L. Gao; Shanghai Institute of Ceramics, CAS, China</td>
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</table>
15:30 - 15:45  
**S5-022**  Self-Assembled Linear Bundles of BN Nanosheets in Polysiloxane Film under Alternating DC Electric Field  
H.-B. Cho, T. Nakayama, H. Suematsu, S. Tanaka, T. Suzuki, W. Jiang, K. Niihara; Nagaoka University of Technology, Japan

15:45 - 16:00  
**S5-023**  Effect of Type of Nanoclay on Thermal Properties of Polyethylene Terephthalate/Clay Nanocomposites  
M. Parvinzadeh¹, S. Moradian², A. Rashidi¹, M.-E. Yazdanshenas¹; ¹Islamic Azad University, Iran, ²Amirkabir University of Technology, Iran

16:00 - 16:15   Break

16:15 - 18:00: Materials Design, Novel Synthesis and Processing Technology (II)  
Chairs: Hiroyuki Nakamura (National Institute of Advanced Industrial Science and Technology, Japan) and Laszlo A. Gomze (University of Miskolc, Hungary)

16:15 - 16:45  
**S5-024**  Shape-Controlled Synthesis of Inorganic Nanostructures (Invited)  
L. Gao; Shanghai Institute of Ceramics, CAS, China

16:45 - 17:15  
**S5-025**  Environmentally Conscious SiC Ceramics Obtained from Natural Precursors: Recent Developments and Challenges (Invited)  
J. Ramirez-Rico¹, J. M. Fernandez¹, M. Singh²; ¹Universidad de Sevilla-CSIC, Spain, ²Ohio Aerospace Institute, USA

17:15 - 17:45  
**S5-026**  Graphite-Copper Composites from Natural and Synthetic Scaffolds (Invited)  
K. T. Faber, M. T. Johnson, A. E. Sall; Northwestern University, USA

17:45 - 18:00  
**S5-027**  Preparation of BN Nano-film Coated IVa Group Transition Metal Boride Composite Particles by a Novel Solid State Reaction Route  
J. Zou¹,², G.-J. Zhang³; ¹Shanghai Institute of Ceramics, China, ²Chinese Academy of Sciences, China

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**Wednesday, November 17**

Room: 1003

9:00 - 10:15: Hetero-Modulus Materials  
Chairs: Igor L. Shabalina (The University of Salford, UK) and Jingyang Wang (Institute of Metal Research, China)

9:00 - 9:30  
**S5-028**  Hetero Modulus Alumina Matrix Nanoceramics and CMCs with Extreme Dynamic Strength (Invited)  
L. A. Gomze¹, L. N. Gomze²; ¹University of Miskolc, Hungary, ²IGREX Engineering Service Ltd., Hungary

9:30 - 10:00  
**S5-029**  Glass-Ceramic/Carbon Nanotube Composites: Processing, Properties and Influence of Nanotube Alignment (Invited)  
R. I. Todd, G. Otieno, A. Mukhopadhyay, M. L. H. Green, N. Grobert; University of Oxford, UK

10:00 - 10:15  
**S5-030**  Reaction Hot-Pressing and Property-Composition Relationships of Modified Sialon – Boron Nitride Hetero-Modulus Ceramics  
W. Yu¹, S. Igor¹, Z. Lingfei², Z. Valeri³; ¹University of Salford, UK, ²University of Aveiro, Portugal, ³Ural State Technical University, Russia

10:15 - 10:30   Break
### 10:30 - 12:00: Mechanical Properties, Fracture and Deformation Mechanics (I)
Chairs: Wei-Hsing Tuan (National Taiwan University, Taiwan) and Richard Todd (University of Oxford, UK)

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<th>Time</th>
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<tr>
<td>10:30</td>
<td>S5-031</td>
<td>Ductile Deformation in Alumina and Alumina Nanocomposites under Pseudo-Static to High Strain Rate Condition (Invited)</td>
<td>S. Ghosh, H. Wu; Loughborough Univeristy, UK</td>
</tr>
<tr>
<td>11:00</td>
<td>S5-032</td>
<td>Design, Structure and Properties of Nano-layered Damage Tolerant Transition-metal Carbides and Nitrides (Invited)</td>
<td>J. Wang, Y. Zhou; Chinese Academy of Sciences, China</td>
</tr>
<tr>
<td>11:45</td>
<td>S5-034</td>
<td>Light-Weight B₄C/BN-Based Superhard and Highly Shock-Energy Dissipative Nano-Composites via SPS Synthesis/Consolidation</td>
<td>V. Oleg, B. Hanna, S. Yoshio, S. Liap, T. Y. Kwang, M. Jan; National Institute for Materials Science, Japan, National Yang Technological University, Singapore, NASU, Ukraine</td>
</tr>
</tbody>
</table>

### 13:15 - 15:15: Mechanical Properties, Fracture and Deformation Mechanics (II)
Chairs: Houzheng Wu (Loughborough University, UK) and Jun-ichi Matsushita (Tokai University, Japan)

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<tr>
<td>13:15</td>
<td>S5-035</td>
<td>Bio-inspired Design of Toughening Agent (Invited)</td>
<td>W.-H. Tuan; National Taiwan University, Taiwan</td>
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<tr>
<td>13:45</td>
<td>S5-036</td>
<td>Hybridization of Cu by Direct Bonding to Oxidized Silicon Nitride (Highlighted Oral)</td>
<td>S.-I. Tanaka; Tohoku University, Japan</td>
</tr>
<tr>
<td>14:45</td>
<td>S5-038</td>
<td>AlN Substrate with a Thick Oxide Layer of High Interfacial Adhesion Strength</td>
<td>K. Hirayama, J. Imai, M. Sato, N. Hashimoto; Panasonic Electric Works Co., Ltd., Japan</td>
</tr>
<tr>
<td>15:00</td>
<td>S5-039</td>
<td>Electrodeposition and Characterization of Ni/Ti₅Si(Al)C₂ Composite Coatings</td>
<td>Y. Liang, X. Liu, Y. Zhou; Chinese Academy of Sciences, China, Northeastern University, China</td>
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<tr>
<td>15:30</td>
<td>Break</td>
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### 15:30 - 17:15: Low-dimensional and Anisotropic Nanomaterials
Chairs: Sanjay Mathur (University of Cologne, Germany) and Yanfeng Gao (Shanghai Institute of Ceramics, China)

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<tr>
<td>15:30</td>
<td>S5-040</td>
<td>Preparation, Characterization and Application of One-dimensional Transition Metal Oxide Nanostructures (Invited)</td>
<td>Y. Dai, W. Chen; Wuhan University of Technology, China</td>
</tr>
<tr>
<td>16:00</td>
<td>S5-041</td>
<td>Fabrication of ZnO Nanosheet and In₂O₃ Nanorod Films Via the Pyrolysis Reaction of Those Intermediate Compounds by Chemical Bath Deposition</td>
<td>E. Hosono, T. Saito, S. Fujihara, H. Zhou; National Institute of Advanced Industrial Science and Technology, Japan, Keio University, Japan</td>
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# Symposium 5

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<tr>
<td>16:15 - 16:30</td>
<td>S5-042</td>
<td>Nanoparticles Loaded TiO₂ Nanotubes Synthesis by UV Light Induced Reduction Reaction</td>
<td>D. J. Park, T. Sekino, J.-Y. Kim, S. Tsukuda, S.-I. Tanaka; Tohoku University, Japan</td>
</tr>
<tr>
<td>16:30 - 16:45</td>
<td>S5-043</td>
<td>The Synthesis and Characterization of Ultra-long Bismuth Telluride Nanotubes by Electrospinning and Galvanic Displacement</td>
<td>K.-J. Lee¹, H. Song¹, H. Jung², N. V. Myung², Y.-H. Choa¹; ¹Hanyang University, Korea, ²University of California-Riverside, USA</td>
</tr>
<tr>
<td>16:45 - 17:00</td>
<td>S5-044</td>
<td>CeO₂ Nanoparticles Deposited on Carbon Nanotubes</td>
<td>G. Zheng, R. Nomiyama, H. Sano, Y. Uchiyama; Nagasaki University, Japan</td>
</tr>
<tr>
<td>17:00 - 17:15</td>
<td>S5-045</td>
<td>Synthesis of Nitrogen-doped CNTs and their Nanohybrids with Chemically-prepared Au Nanoparticles</td>
<td>T. Sekino¹, S. Y. Moon¹, T. Kusunose², S.-I. Tanaka¹; ¹Tohoku University, Japan, ²Kagawa University, Japan</td>
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### Thursday, November 18

**Room: 1003**

**9:00 - 10:30: Properties and Multi-Functions in Hybrid and Nanostructured Materials (I)**

**Chairs:** Ivar Reimanis (Colorado School of Mines, USA) and Ying Dai (Wuhan University of Technology, China)

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<td>9:00 - 9:30</td>
<td>S5-046</td>
<td>Advanced Morphology Characterization of Nano-Structured Materials (Invited)</td>
<td>S. S. Ray; Council for Scientific and Industrial Research, South Africa</td>
</tr>
<tr>
<td>9:30 - 10:00</td>
<td>S5-047</td>
<td>Metal Oxide Nanowires: Growth, Applications and Devices (Invited)</td>
<td>S. Mathur¹, S. Barth¹, F. Hernández-Ramírez², J. D. Prades², A. Romano-Rodríguez², J. R. Morante²; ¹University of Cologne, Germany, ²University of Barcelona, Spain</td>
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<tr>
<td>10:00 - 10:15</td>
<td>S5-048</td>
<td>Preparation of Carbon Quantum Dots with Tunable Photoluminescence by Rapid Laser Passivation in Ordinary Organic Solvents</td>
<td>X. Li, H. Wang, Y. Shimizu, A. Pyatenko, K. Kawaguchi, N. Koshizaki; National Institute of Advanced Industrial Science and Technology, Japan</td>
</tr>
<tr>
<td>10:15 - 10:30</td>
<td>S5-049</td>
<td>The Fabrication of 0-D and 1-D Nanomaterials for Nanodevices Using Lipid Nanotubes</td>
<td>Y.-G. Han, M. Aoyagi, M. Asakawa, T. Shimizu; National Institute of Advanced Industrial Science and Technology, Japan</td>
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<tr>
<td>10:30 - 10:45</td>
<td>Break</td>
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**10:45 - 12:00: Properties and Multi-Functions in Hybrid and Nanostructured Materials (II)**

**Chairs:** Suprakas Sinha Ray (National Centre Nanostructured Materials, South Africa) and Rajagopalan Ramaseshan (Indira Gandhi Centre for Atomic Research, India)

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<tr>
<td>10:45 - 11:00</td>
<td>S5-050</td>
<td>Solution-phase Processing of Nanostructured VO₂ Thin Films for Smart Windows</td>
<td>Y. F. Gao, L. Kang, Z. Zhang, C. Cao, Z. Chen, J. Du, H. Luo; Shanghai Institute of Ceramics, CAS, China</td>
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<tr>
<td>11:00 - 11:15</td>
<td>S5-051</td>
<td>The Thin-Film Transducers of Pressure and Temperature</td>
<td>K. Svetlana; Ural Federal University, Russia</td>
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</table>
**11:15 - 11:30**

**S5-052**  Electrochemical Performance of TiO₂ Synthesized via Mechanochemical Milling  
P. Xiao, M. A. Thein, M. O. Lai, L. Lu; National University of Singapore, Singapore

**11:30 - 11:45**

**S5-053**  Electrochemical Properties for Mo₅V₃O₁₇/MWNTs Nanocomposites  
Q. Zhu¹, S. Hu¹, W. Jin¹, H. Wen¹, W. Chen¹; ¹Wuhan University of Technology, China, ²State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, China, ³Russian Academy of Science, Russia

**11:45-12:00**

**S5-054**  Nanoscale Mechanical Property Characterization of Ceramics and Ceramic Tribofilms  
N. Fujisawa; Hysitron, Inc., USA

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**13:15 - 15:00: Properties and Multi-Functions in Hybrid and Nanostructured Materials (III)**  
Chairs: Yong-Ho Choa (Hanyang University, Korea) and Makoto Nanko (Nagaoka University of Technology, Japan)

**13:15 - 13:45**

**S5-055**  Nanoscale Magnetic Measurements in Doped Oxides (Invited)  
I. Reimanis¹, J. White³, G. Coors²; ¹Colorado School of Mines, USA, ²Ceramatec Inc., USA, ³Quantum Design, USA

**13:45 - 14:00**

**S5-056**  Preparation of Nd₃Fe₅B Nanoparticles under Femtosecond Laser Ablation in Liquid  
T. Yamamoto¹, Y. Shimotsuka¹, M. Sakakura¹, M. Nishi¹, K. Miura¹, K. Hirao¹, M. Sagawa³; ¹Kyoto University, Japan, ³Intermetallics CO., LTD., Japan

**14:00 - 14:15**

**S5-057**  Reversible Control in Surface Plasmon Resonance Wavelength of Gold Nanoparticles by Using Polydimethylsiloxane (PDMS)  
Y. Tsutsui¹, M. Nogami¹; ¹Nagoya Institute of Technology, Japan

**14:15 - 14:30**

**S5-058**  Nanostructure-Controlled Plasmonic Nanocomposite Films Prepared by Aerosol Deposition  
J.-H. Park, J. Akedo; National Institute of Advanced Industrial Science and Technology, Japan

**14:30 - 14:45**

**S5-059**  3D Copper Nanostructures for Plasmonic Detection of Molecules  
J.-C. Valmalette¹, J. Julien Romann², K. Sato³, S. Ohara³; ¹Université du Sud Toulon Var, France, ²CNRS, France, ³Osaka University, Japan

**14:45-15:00**

**S5-060**  Nano Glass Flakes with Inherent Colour  
S. J. Brigham, E. Golden; Glassflake Ltd, Australia

**15:00 - 15:15**  Break

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**15:15 - 16:15: Properties and Multi-Functions in Hybrid and Nanostructured Materials (IV)**  
Chair: Tadachika Nakayama (Nagaoka University of Technology, Japan)

**15:15 - 15:30**

**S5-061**  Study of Structural and Dielectric Properties of Co Doped Copper Ferrite Nanoparticles  
A. Azam, M. S. Ansari, A. H. Naqvi; Aligarh Muslim University, India

**15:30- 15:45**

**S5-062**  The Behavior of Negative Permittivity and Negative Permeability in Bulk Fe-Al₂O₃ Nanocomposites Prepared by Selective Reduction  
R. Fan, Z. Zhang, X. Shi, M. Gao, J. Guo; Shandong University, China
15:45 - 16:00
S5-063 Crack-Healing Function of Metal/Al₂O₃ Hybrid Materials
M. Nanko; Nagaoka University of Technology, Japan

16:00-16:15
S5-064 Characterization of Hydroxyapatite with Titanium Nonoxide Ultrafine Powder by using Planet Type Ball Milling
J. Matsushita¹, Y. Hayakawa¹, K. Ishiwata¹, R. Takahashi¹, T. Takehana¹, Y. Matsushita²; ¹Tokai University, Japan, ²Kanagawa Dental College, Japan

Poster Session
Monday, November 15
Room: Event Hall
12:00 - 14:00

S5-P001 Preparation and Property Control of ZnO Nanoparticles by Two Step Process
Y. Sakai¹, C.-G. Lee¹, M. Uehara², H. Nakamura², H. Maeda¹,²,³; ¹Kyushu University, Japan, ²National Institute of Advanced Industrial Science and Technology, Japan, ³Japan Science and Technology Agency, Japan

S5-P002 Crystal Structures of Solid Solution (Ba₁₋ₓCaₓ)(Sc₁/₂Nb₁/₂)O₃ System
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