

Second International Symposium on Smart Layered Materials and Structures for Energy Saving

Program

October 9, 2014

Meeting Room 8

Chair: Fredrik Lundell (Royal Institute of Technology KTH, Sweden)

CS1-6 **Material Design and Crystal Growth of High Performance
9:00-10:00 Scintillators and Their Applications** (*Keynote*)

Akira Yoshikawa, Kei Kamada, Shunsuke Kurosawa, Yuui Yokota, Yuji Ohashi (Tohoku University, Japan), Martin Nikl (Institute of Physics AC CR, Czech Republic)

CS1-7 **Importance of Surface Structure for Dynamic Wetting** (*Invited*)

10:00-10:30 Jiayu Wang, Yoshinori Nakamura (The University of Tokyo, Japan), Andreas Carlson (Royal Institute of Technology KTH, Sweden), Feng Yue, Yuji Suzuki (The University of Tokyo, Japan), Gustav Amberg (Royal Institute of Technology KTH, Sweden), Junichiro Shiomi (The University of Tokyo / CREST, Japan), Minh Do-Quang (Royal Institute of Technology KTH, Sweden)

Chair: Gustav Amberg (Royal Institute of Technology KTH, Sweden)

CS1-8 **Modeling of Cortical Bone and Bone Marrow** (*Invited*)

10:40-11:10 Makoto Ohta, Wataru Sakuma, Yuta Muramoto, Hitomi Anzai, Toshio Nakayama (Tohoku University, Japan)

CS1-9 **Flow Manipulation of Nano-Fibrillated Cellulose: a Key
11:10-11:40 Technology for New Bio-Based Materials** (*Invited*)

Karl Håkansson, Fredrik Lundell, Lisa Prahll-Wittberg, Daniel Söderberg (Royal Institute of Technology KTH, Sweden)

CS1-10 **Fundamental Characteristics on Electromagnetic Energy
11:40-12:10 Conversion Device for Efficient Wind Energy Utilization** (*Invited*)

Hidemasa Takana, Akira Tanida (Tohoku University, Japan)

Chair: Fumio Kojima (Kobe University, Japan)

Zhenmao Chen (Xi'an Jiaotong University, China)

OS4-1 **Evaluation of Residual Strain in the Structural Materials of
14:50-15:05 Nuclear Power Plants**

Tetsuya Uchimoto, Toshiyuki Takagi (Tohoku University, Japan), Zhenmao Chen (Xi'an Jiaotong University, China), Kensuke Yoshihara (The Kansai Electric Power Co., Inc., Japan), Gerd Dobmann (Saarland University, Germany)

OS4-2 **Assessment of Mechanical Reliability for Development of
15:05-15:30 Electrochemical Devices**

Kazuhisa Sato (Tohoku University, Japan), Nacer Azeggagh (INSA Lyon, France), Toshiyuki Hashida (Tohoku University, Japan)

OS4-3 **Impact Force Identification and Damage Monitoring of Laminated Structures**
15:30-15:55 Satoshi Atobe, Hisao Fukunaga (Tohoku University, Japan)

OS4-4 **Damage Evaluation of Cu-Alloy Combustion Chamber of Liquid Rocket Using ECT**
15:55-16:20 Mitsuharu Shiwa, Donfeng He, Masao Hayakawa (National Institute for Materials Science, Japan), Sinich Moriya, Teiu Kobayashi (Japan Aerospace Exploration Agency, Japan)

Chair: Gerd Dobmann (Saarland University, Germany)
Mitsuharu Shiwa (National Institute for Materials Science, Japan)

OS4-5 **Physically Based Fatigue Monitoring of Metals** (*Invited*)
16:30-17:20 Dietmar Eifler, Marek Smaga, Marcus Klein (University of Kaiserslautern, Germany)

OS4-6 **Nondestructive Evaluation of Plastic Deformation in Biaxial Specimen using Pulsed ECT Method**
17:20-17:35 Shejuan Xie, Zhenmao Chen (Xi'an Jiaotong University, China), Toshiyuki Takagi, Tetsuya Uchimoto (Tohoku University, Japan), Kensuke Yoshihara (The Kansai Electric Power Co., Japan)

OS4-7 **Development of Guided Wave Testing System Using Electromagnetic Acoustic Transducer Array**
17:35-17:50 Akinori Furusawa, Atsushi Morikawa, Fumio Kojima (Kobe University, Japan)

17:50-18:00 **Introduction of JSPS core-to-core program**
"International research core on smart layered materials and structures for energy saving"
Toshiyuki Takagi (Tohoku University, Japan)

October 10, 2014

Meeting Room 8

Chair: Fredrik Lundell (KTH Royal Institute of Technology, Sweden)
Yuka Iga (Tohoku University, Japan)

OS4-8 **Cavitation Induced Damage: FEM Inverse Modeling of the Flow Aggressiveness** (*Invited*)
10:40-11:25 Samir Chandra Roy, Marc Fivel, Jean-Pierre Franc, Christian Pellone (University Grenoble Alpes, France)

OS4-9 **Development of Ultra High Molecular Weight Polyethylene Coatings by Cold Spray**
11:25-11:40 Kesavan Ravi, Kazuhiro Ogawa (Tohoku University, Japan), J. Y. Cavaille, Tiana Deplancke (INSA Lyon, France)

OS4-10 **Analysis of High Reynolds Number Flow Behind a Square Cylinder by Hybrid Wind Tunnel (Improvement of Critical Gain of Instability for Pressure Feedback)**
11:40-11:55 Jumpei Okutani, Toshiyuki Hayase, Kosuke Inoue, Shusaku Sone, Kenichi Funamoto (Tohoku University, Japan)

OS4-11 **Short Range and Long Range Magnetic Order in Zig-Zag Chain
11:55-12:10 Compound $\text{Bi}_2\text{Fe}(\text{SeO}_3)_2\text{OCl}_3$**
Peter S. Berdonosov, Ekaterina S. Kuznetsova, Valery A. Dolgikh, Alexey V. Sobolev, Igor A. Presniakov (Lomonosov Moscow State University, Russia), Andrei V. Olenev (University of California Davis, USA), Badiur Rahaman, Tanusri Saha-Dasgupta (S. N. Bose National Centre for Basic Sciences, India), Konstantin V. Zakharov, Elena A. Zvereva, Olga S. Volkova, Alexander N. Vasiliev (Lomonosov Moscow State University, Russia)

Chair: Christian Boller (Saarland University, Germany)
Hiroyuki Miki (Tohoku University, Japan)

OS4-12 **Experimental Study on BaTiO_3 /Ionic Polymer Metal Composite
13:10-13:55 (*Invited*)**
Xiong Ke, Bian Kan, Zhu Kongjun, Liu Hongguang (Nanjing University of Aeronautics and Astronautics, China)

OS4-13
13:55-14:10 **Effects of Delamination in Strength of Drilled CFRP Laminates**
Chongcong Tao, Jinhao Qiu (Nanjing University of Aeronautics and Astronautics, China), Tomonaga Okabe (Tohoku University, Japan), Hongli Ji (Nanjing University of Aeronautics and Astronautics, China), Toshiyuki Takagi (Tohoku University, Japan)

OS4-14
14:10-14:25 **Smart Energy-Harvesting from Various Vibrations with Digital
Regulation Approach**
Yuta Yamamoto, Kenji Yoshimizu, Kanjuro Makihara (Tohoku University, Japan)

OS4-15
14:25-14:40 **Development of Energy Harvesting Devices based on Magnetic
Shape Memory Alloy Thin Films**
Marcel Gueltig (Karlsruhe Institute of Technology, Germany), Makoto Ohtsuka, Hiroyuki Miki, Toshiyuki Takagi (Tohoku University, Japan), Manfred Kohl (Karlsruhe Institute of Technology, Germany)

Chair: Ke Xiong (Nanjing University of Aeronautics and Astronautics, China)
Jean-Yves Cavaille (INSA-Lyon, France)

OS4-16 **Fabrication of Lead-based Relaxor Piezoelectric Ceramics with
14:50-15:15 High Performance**
Kongjun Zhu, Jianzhou Du, Jinhao Qiu (Nanjing University of Aeronautics and Astronautics, China)

OS4-17 **Development of Smart Fatigue Sensor using Metal-containing
15:15-15:40 Amorphous Carbon Coatings**
Hiroyuki Kosukegawa, Mami Takahashi (Tohoku University, Japan), Julien Fontaine (Ecole Centrale de Lyon, France), Takanori Takeno, Hiroyuki Miki, Toshiyuki Takagi (Tohoku University, Japan)

OS4-18 **Ferrimagnetism in Kagome – Type Antiferromagnet $\text{Ni}(\text{NO}_3)_2$
15:40-16:05**
Olga S. Volkova (M. V. Lomonosov Moscow State University / Ural Federal University, Russia), Vladimir V. Mazurenko (Ural Federal University, Russia), Igor V. Solovyev (Ural Federal University, Russia / National Institute for Materials Science, Japan), Evgenya B. Deeva, Igor V. Morozov (M. V. Lomonosov Moscow State University, Russia), Jiunn-Yuan Lin, Chih-Kuang Wen (National Chiao-Tung University, Taiwan), Jinming Chen (National Synchrotron Radiation Research Center, Taiwan),

Mahmoud Abdel-Hafiez (Liege University, Belgium / Fayoum University, Egypt) , Alexander N. Vasiliev (M. V. Lomonosov Moscow State University / Ural Federal University, Russia)

OS4-19

MoS₂-DLC Nanocomposite Coating for Low Friction Systems

16:05-16:30

Takanori Takeno, Kazuki Ikoma, Toshiyuki Takagi, Koshi Adachi (Tohoku University, Japan)

16:30-16:40

Closing

Christian Boller (Saarland University, Germany)