

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

Program

November 26, 2013

Room: TACHIBANA

Joint session with First International Symposium on Innovative Energy Research

Chair: Jinhao Qiu (Nanjing University of Aeronautics & Astronautics, China)

OS8-1 **Smart Microdevices Based on Ferromagnetic Shape Memory Alloys
(Invited)**

16:30-17:00

Manfred Kohl, Marcel Gueltig (Karlsruhe Institute of Technology, Germany),
Makoto Ohtsuka, Hiroyuki Miki (Tohoku University, Japan) and Ruizhi Yin
(Karlsruhe Institute of Technology, Germany)

OS8-2

17:00-17:30

Fatigue Monitoring Of CFRP In The VHCF Regime

Gerd Dobmann, Christian Boller (Fraunhofer-IZFP, Germany) and Dietmar
Eifler (Technical University, Germany)

OS8-3

17:30-18:00

**Quantitative Detection of Fatigue Damage in Holed Composite
Laminates using an Embedded FBG Sensor**

Tomonaga Okabe (Tohoku University, Japan), Shigeki Yashiro (Shizuoka
University, Japan)

November 27, 2013

Room: ROOM 8

Chair: Kazuhiro Ogawa (Tohoku University, Japan)

OS8-4 **Generic Elastic and Elasto Plastic Macroscopic Properties of a
Closed Cell Polymer Foam (Invited)**

9:00-9:30

Alain Combescure, Carine Barbier and Dominique Baillis (INSA Lyon, France)

OS8-5 **Structural Health Monitoring and Non-Destructive Evaluation**

9:30-9:50

Jinhao Qiu, Chao Zhang, Jun Cheng and Hongli Ji (Nanjing University of
Aeronautics & Astronautics, China)

OS8-6 **Preparation of Electrostrictive Polyurethane**

9:50-10:10

Masae Kanda (Tokai University, Japan), Kaori Yuse, Daniel Guyomar (INSA
Lyon, France) and Yoshitake Nishi (Tokai University, Japan)

OS8-7 **Smart Energy Harvester using Digitally Autonomous Device**

10:10-10:30

Yuta Yamamoto, Kanjuro Makihara (Tohoku University, Japan)

10:30-10:40

BREAK

Chair: Toshiyuki Takagi (Tohoku University, Japan)

OS8-8 **Fabrication, 3D Characterization and Simulation of Porous Metals for Energy Saving (*Keynote*)**

10:40-11:20

Eric Maire, Loic Courtois, Jérôme Adrien, Michel Perez, Damien Fabrègue and Sandrine Cottrino (INSA Lyon, France)

OS8-9 **High Strength of Prestressed CFRP Inspired by Reinforced Concrete Innovated by Great French Engineer**

11:20-11:50

Yoshitake Nishi, Takumi Okada (Tokai University, Japan)

11:50-13:10 LUNCH

Chair: Noritaka Yusa (Tohoku University, Japan)

OS8-10 **Reliability Assessment for Pipe Elbows with Local Wall Pinning using Guided Wave Testing (*Invited*)**

13:10-13:40

Fumio Kojima, Jyunko Hioki, Hiroyuki Nakamoto (Kobe University, Japan) and Hideo Nishino (University of Tokushima, Japan)

OS8-11 **Non-destructive Materials Reliability Evaluation for Cu-alloy of Combustion Chamber**

13:40-14:10

Mitsuharu Shiwa, Dongfeng He, Yoshinori Ono, Masao Hayakawa (National Institute for Materials Science, Japan), Hideo Sunakawa, Naoki Nagao, Sinich Moriya Eiichi Sato (Japan Aerospace Exploration Agency, Japan), Tetsuya Uchimoto and Toshiyuki Takagi (Tohoku University, Japan)

OS8-12 **Evaluation of Cavity Defect in Metallic Foam with DCPD Method**

14:10-14:40

Zhenmao Chen (Xi'an Jiaotong University, China), Shejuan Xie (Tohoku University, Japan), Xiaojuan Wang (Xi'an Jiaotong University, China), Tetsuya Uchimoto and Toshiyuki Takagi (Tohoku University, Japan)

14:40-14:50 BREAK

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

OS8-13 **Flow Control Attempts Using Smart Materials (*Invited*)**

14:50-15:20

Yu Fukunishi, Seiichiro Izawa (Tohoku University, Japan)

OS8-14 **The Supercomputing of Fluid and Structure Interaction Caused by Natural Disasters**

15:20-15:50

Jun Ishimoto (Tohoku University, Japan)

OS8-15 **Reconstruction of Stiffness Coefficients in Orthotropic Plates Based on Lamb Waves Phase Velocities using Genetic Algorithm**

15:50-16:20

Jinling Zhao, Jinhao Qiu and Hongli Ji (Nanjing University of Aeronautics and Astronautics, China)

16:20-16:30 BREAK

Chair: Kosuke Ito (Nihon University, Japan)

OS8-16 **Development of the Functional Hard Carbon Coating for Machine and Structural Materials (*Invited*)**

16:30-17:00

Hiroyuki Miki, Takanori Takeno, Hiroyuki Kosukegawa and Toshiyuki Takagi (Tohoku University, Japan)

OS8-17 **Promoting Energy-saving with Diamond-Like Carbon Coatings: Solid Lubrication Processes**

17:00-17:30

Julien Fontaine (Ecole Centrale de Lyon, France), Hiroyuki Miki, Takanori Takeno (Tohoku University, Japan), Thierry Le Mogne, Sandrin Bec, Michel Belin, (Ecole Centrale de Lyon, France), Koshi Adachi and Toshiyuki Takagi (Tohoku University, Japan)

OS8-18 **Nondestructive characterization of flake graphite cast iron by Magnetic Adaptive Testing**

17:30-18:00

Gábor Vértesy (Institute of Technical Physics and Materials Science, Hungary), Tetsuya Uchimoto, Toshiyuki Takagi (Tohoku University, Japan) and Ivan Tomáš (Academy of Sciences of the Czech Republic, Czech Republic)

18:00-18:10 **Closing**

J. Y. Cavallé (INSA Lyon, France)