

# ISETS05

International Symposium on EcoTopia Science 2005

August 8 (Mon) - 9 (Tue), 2005  
Integrated Building (IB), Nagoya University,

Organized by EcoTopia Science Institute, Nagoya University

**Tuesday, August 9, 2005**

## Conference Hall

9:00 - 10:00

### Plenary Lecture 2

*Chair : H. Itoh (Nagoya University)*

" Waste Management for Sustainable Society "  
Prof. M. Tanaka  
Okayama University, Japan

10:10 - 11:30

OS2 Advanced Energy System (4)

*Chair : W. Permchart (King Mongkut's Institute of Technology Ladkrabang)*

OS2-4-1

" Steam Gasification of Biomass on Porous Ni Catalyst "  
K. Hanamura  
Tokyo Institute of Technology, Japan

OS2-4-2

" High Efficient Energy Use by Dimethyl Ether (DME) "  
T. Nakagawa<sup>(1)</sup>, N. Kobayashi<sup>(2)</sup>, K. Kitagawa<sup>(2)</sup>  
(1) JFE Holdings, Inc., Japan  
(2) Nagoya University, Japan

OS2-4-3

" Different Configurations of the Zecomix High Efficiency Zero Emission Hydrogen and Power Plant "  
A. Calabrò, P. Deiana, P. Fiorini, S. Stendardo, G. Girardi  
ENEA-Italian Agency for New Technologies, Energy and Environment, Italy

OS2-4-4

" An Efficiency Formula for a Hydrodynamic Vortex Separator "  
D. A. Egarr, T. O'Doherty, M. Faram, N. Syred  
Cardiff University, UK

18:00 - 18:20

### Closing Ceremony

## Room A (IB071)

13:00 - 15:20

OS2 Advanced Energy System (5)  
- HTS Power Applications -

*Chair : K. Hamajima (Tohoku University)*

OS2-5-1 **Keynote Lecture**

" The New Generation of Superconductor Equipment for the Electric Power Grid "  
A. P. Malozemoff  
American Superconductor Corporation, USA

OS2-5-2

" Low-cost and High-power-density Resistive Fault-current Limiting Elements Using High-temperature Superconducting Thin Films and Au-Ag Alloy Shunt Layers "  
H. Yamasaki, M. Furuse, K. Arai, K. Kaiho, Y. Nakagawa  
National Institute of Advanced Industrial Science and Technology, Japan

OS2-5-3

" Development of SMES for Bridging Instantaneous Voltage Dips "  
S. Nagaya<sup>(1)</sup>, N. Hirano<sup>(1)</sup>, H. Moriguchi<sup>(1)</sup>, E. Adachi<sup>(1)</sup>, H. Nakabayashi<sup>(1)</sup>, K. Shikimachi<sup>(1)</sup>, S. Hanai<sup>(2)</sup>, J. Inagaki<sup>(2)</sup>, A. Kawaguchi<sup>(2)</sup>, S. Kawashima<sup>(2)</sup>, T. Ito<sup>(2)</sup>  
(1) Chubu Electric Power Co., Inc., Japan  
(2) Toshiba Corporation, Japan

OS2-5-4

" Technical Feasibility of Superconducting Fault Current Limiting Transformer in Future Electric Power Network "  
H. Kojima<sup>(1)</sup>, C. Kurupakorn<sup>(1)</sup>, N. Hayakawa<sup>(1)</sup>, M. Goto<sup>(1)</sup>, N. Kashima<sup>(2)</sup>, S. Nagaya<sup>(2)</sup>, H. Okubo<sup>(1)</sup>  
(1) Nagoya University, Japan  
(2) Chubu Electric Power Co., Inc., Japan

OS2-5-5

" Demonstration Tests of 500 m Long HTS Power Cable for Electric Power Transmission System with High Efficiency "  
T. Takahashi<sup>(1)</sup>, M. Ichikawa<sup>(1)</sup>, H. Suzuki<sup>(1)</sup>, M. Yagi<sup>(2)</sup>, S. Mukoyama<sup>(2)</sup>, A. Kimura<sup>(3)</sup>, A. Ichinose<sup>(3)</sup>, S. Akita<sup>(1)</sup>

- (1) Central Research Institute of Electric Power Industry, Japan
- (2) The Furukawa Electric Co., Ltd., Japan
- (3) Super-GM, Japan

#### OS2-5-6

" Transmission Level Applications of Superconducting Fault Current Limiters "

M. Noe<sup>(1)</sup>, M. Steurer<sup>(2)</sup>

- (1) Forschungszentrum Karlsruhe, Institut für Technische Physik, Germany
- (2) Florida State University, USA

#### 15:40 - 18:00

OS2 Advanced Energy System (6)

- Environment-friendly Electric Power Equipment -

*Chair : M. Yashima (Central Research Institute of Electric Power Industry)*

#### OS2-6-1

" Development of Medium Voltage Solid Insulated Switchgear "

T. Shioiri

Toshiba Corporation, Japan

#### OS2-6-2

" Electrical Insulation Techniques in Vacuum for Environment-friendly High Voltage Electric Power Equipment "

K. Kato, H. Okubo

Nagoya University, Japan

#### OS2-6-3

" Development of Vacuum Insulation Technology and Its Application to Medium Voltage Electrical Power Apparatus "

S. Sato, H. Koga, K. Koyama

Mitsubishi Electric Corporation, Japan

#### OS2-6-4

" Effect of Magnetic Flux Around Ring Electrode on Current Interrupting Performance of Rotary-arc Type Load-break Switch Filled with CO<sub>2</sub>

Y. Yokomizu<sup>(1)</sup>, T. Matsumura<sup>(1)</sup>, A. Ishikawa<sup>(2)</sup>,

T. Furuhashi<sup>(3)</sup>, K. Mitsukuchi<sup>(3)</sup>

- (1) Nagoya University, Japan
- (2) Chubu Electric Power Co., Inc., Japan
- (3) Energy Support Corporation, Japan

#### OS2-6-5

" Partial Discharge and Breakdown Properties of CO<sub>2</sub> and SF<sub>6</sub> Gas Mixture as an Environmentally-benign Gas "

M. Hikita, S. Ohtsuka

Kyushu Institute of Technology, Japan

#### OS2-6-6

" Development of SF<sub>6</sub>-free 72 kV GIS "

T. Rokunohe<sup>(1)</sup>, Y. Yagihashi<sup>(1)</sup>, F. Endo<sup>(2)</sup>,

K. Aoyagi<sup>(3)</sup>, H. Saitoh<sup>(3)</sup>, T. Oomori<sup>(3)</sup>

(1) Hitachi, Ltd. Power & Industrial Systems R&D

Laboratory, Japan

(2) Nagoya University, Japan

(3) Japan AE Power Systems Corporation, Japan

#### OS2-6-7

" Proposal of All Solid Insulated Substation as a Next Generation Electric Power Transmission and Distribution "

T. Takahashi, T. Takahashi, Y. Mizutani, T. Okamoto

Central Research Institute of Electric Power Industry, Japan

### **Room B (IB015)**

#### 10:10 - 11:30

OS1 Renewable Energy (4)

- Hydro, Tidal, Wind Energy -

*Chair : Y. Hasegawa (Nagoya University)*

#### OS1-4-1

" New Type Hydroelectric Units to Exploit Renewable Energy "

A. Inagaki<sup>(1)</sup>, T. Kanemoto<sup>(2)</sup>, D. Tanaka<sup>(1)</sup>

- (1) DMW Corporation, Japan
- (2) Kyushu Institute of Technology, Japan

#### OS1-4-2

" Computational Study of Tidal Turbines for Extracting Energy from the Tides "

D. A. Egarr, T. O'Doherty, S. Morris

Cardiff University, UK

#### OS1-4-3

" Investigation of Turbulent Wind Characteristics over Complex Terrain by Field Measurements and Wind Tunnel Testing "

H. Imamura, Y. Hasegawa, H. Suzuki, K. Hatabara,

A. Kuwayama, Y. Majima, Y. Furusawa, K. Kikuyama  
Nagoya University, Japan

#### OS1-4-4

" A Low-Reynolds-Number One-Equation Turbulence Model for Prediction of Local Wind over Complex Terrain "

Xin Wu, H. Hattori, Y. Nagano

Nagoya Institute of Technology, Japan

#### 13:00 - 14:20

OS1 Renewable Energy (5)

- Wind Energy -

*Chair : H. Imamura (College Master Hand, Inc)*

#### OS1-5-1

" Measurement of Pressure Distribution on Oscillating Airfoil "

T. Maeda, Y. Kamada, S. Suzuki

Mie University, Japan

OS1-5-2  
" Numerical Analysis of Tower Effect on Aerodynamic Force for Horizontal Axis Wind Turbine Rotor "  
J. Murata, Y. Hasegawa, H. Imamura, S. Hotta  
Nagoya University, Japan

OS1-5-3  
" Development of Nosecone Wind Turbine in Diffuser Casing "  
T. Maeda, Y. Kamada, H. Tamura  
Mie University, Japan

OS1-5-4  
" Intelligent Wind Turbine Generator with Tandem Rotors and Armatures "  
A. M. Galal, T. Kanemoto, Y. Inada, Y. Konno  
Kyushu Institute of Technology, Japan

## Room C (IB014)

10:10 - 11:30

OS9 Innovative Production System by Nanotechnology (4)

*Chair : N. Saito (Nagoya University)*

OS9-4-1  
" Resistless Patterning and Micromachining Using a Fluorine Laser "  
F. A. Nae, N. Saito, O. Takai  
Nagoya University, Japan

OS9-4-2  
" Nano/microreactor Chip Technologies for Innovative Creation of Highly-Functional Biomolecules "  
T. Ichiki<sup>(1,2)</sup>, Y. Hosoi<sup>(1)</sup>, N. Nemoto<sup>(3)</sup>, T. Akagi<sup>(1)</sup>  
(1) University of Tokyo, Japan  
(2) PRESTO, Japan Science and Technology Agency, Japan  
(3) National Institute of Advanced Industrial Science and Technology, Japan

OS9-4-3  
" Nanobiodevice as a Novel Bio-Tool for Future Personalized Medicine "  
Y. Baba  
Nagoya University, Japan

OS9-4-4  
" Biomimetic Nanotechnology "  
O. Takai  
Nagoya University, Japan

13:00 - 15:20

OS6 Waste and Emission Management (1)

*Chair : T. Fujisawa (Nagoya University)*

OS6-1-1 **Keynote Lecture**  
" Material-lease Recycling "  
K. Halada  
National Institute for Materials Science, Japan

OS6-1-2  
" Desulfurization of Coke Oven Gas from Coking of Coking-Coal Blended with Sorbent and Organic Solid Wastes "  
R. Zhao, S. Ye, Y. Xie, Y. Chen  
Chinese Academy of Sciences, China

OS6-1-3  
" The De-hydrogen Sulfied Characteristic by the Activated Coke Produced from Ligneous Waste "  
M. Sakabe<sup>(1)</sup>, K. Kanagawa<sup>(1)</sup>, N. Kobayashi<sup>(1)</sup>, J. Kobayashi<sup>(2)</sup>, G. Piao<sup>(3)</sup>, S. Hatano<sup>(1)</sup>, Y. Itaya<sup>(1)</sup>, S. Mori<sup>(2)</sup>  
(1) Nagoya University, Japan  
(2) Center for Cooperative Research in Advanced Science and Technology, Japan  
(3) Nagoya Urban Industries Promotion Corporation, Japan

OS6-1-4  
" Reaction between CO<sub>2</sub> and Waste Cement under Wet Grinding "  
S. Yokoyama, S. H. B. Shahidan, Y. Nagao, M. Kawakami  
Toyohashi University of Technology, Japan

OS6-1-5  
" Decomposition of Fluoride Greenhouse Gases by Non-Thermal Plasma in H-Rich Atmosphere "  
T. Fujita<sup>(1)</sup>, Y. Kojima<sup>(1)</sup>, H. Matsuda<sup>(1)</sup>, K. Ushiroebisu<sup>(2)</sup>, L. Huang<sup>(3)</sup>  
(1) Nagoya University, Japan  
(2) Sinto V-Cerax, Ltd., Japan  
(3) Zhejiang University of Technology, China

OS6-1-6  
" Adsorptive Removal of Fluoride and Phosphate from Water by Zeolite in Single and Binary Component Systems "  
M. S. Onyango, Y. Kojima, M. Kubota, H. Matsuda  
Nagoya University, Japan

15:40 - 17:20

OS6 Waste and Emission Management (2)

*Chair : Y. Arita (Nagoya University)*

OS6-2-1  
" Reaction Mechanism and Pathway for Hydrothermal Electrolysis of Organic Compounds "  
M. Goto, K. Yamamoto, M. Sasaki  
Kumamoto University, Japan

OS6-2-2  
" Effect of Operational Conditions on Hydrogen Fermentation Characteristics from Organic Wastewater by Using Granular Sludge "  
K. Yasuda, Y. Kato, A. Sano, M. Kinbara, Y. Bando, M. Nakamura  
Nagoya University, Japan

#### OS6-2-3

" Tungsten and Cobalt Recovery from Used WC-Co Cutting Tools by Hydrothermal Treatment "  
R. Sasai, F. Inagaki, H. Itoh  
Nagoya University, Japan

#### OS6-2-4

" Studies on Sulfurization of Zn(OH)<sub>2</sub> to ZnS in aqueous solution of Na<sub>2</sub>S "  
D. Kuchar<sup>(1)</sup>, T. Fukuta<sup>(2)</sup>, Y. Kojima<sup>(1)</sup>, H. Matsuda<sup>(1)</sup>  
(1) Nagoya University, Japan  
(2) Sanshin MFG. Co., Ltd., Japan

#### OS6-2-5

" Pyrolysis Study of PVC and PET in the Presence of Metal Oxides "  
O. Terakado, M. Hirasawa  
Tohoku University, Japan

### Room D (IB013)

10:10 - 11:30

OS4 Nanomaterials for Energy and Environment (4)

*Chair : Y. Inoue (Nagoya University)*

#### OS4-4-1

" Size Separation of Carbon Nanotubes for Biomedical Applications "  
K. Tohji<sup>(1)</sup>, Y. Sato<sup>(1)</sup>, A. Yokoyama<sup>(2)</sup>, K. Shibata<sup>(2)</sup>,  
S. Ogino<sup>(1)</sup>, K. Tamura<sup>(2)</sup>, T. Akasaka<sup>(2)</sup>, M. Uo<sup>(2)</sup>,  
K. Motomiya<sup>(1)</sup>, B. Jeyadevan<sup>(1)</sup>, R. Hatakeyama<sup>(1)</sup>,  
F. Watari<sup>(2)</sup>  
(1) Tohoku University, Japan  
(2) Hokkaido University, Japan

#### OS4-4-2

" Water-Soluble Hat-Stacked Carbon Nanofibers for Biomedical Applications "  
Y. Sato<sup>(1)</sup>, K. Shibata<sup>(2)</sup>, F. Bunshi<sup>(2)</sup>, A. Yokoyama<sup>(2)</sup>,  
S. Ogino<sup>(1)</sup>, K. Tamura<sup>(2)</sup>, T. Akasaka<sup>(2)</sup>, M. Uo<sup>(2)</sup>,  
K. Motomiya<sup>(1)</sup>, B. Jeyadevan<sup>(1)</sup>, R. Hatakeyama<sup>(1)</sup>,  
F. Watari<sup>(2)</sup>, K. Tohji<sup>(1)</sup>  
(1) Tohoku University, Japan  
(2) Hokkaido University, Japan

#### OS4-4-3

" Biochemical and Pathological Response of Human Macrophage to Micro/Nano Particles "  
K. Tamura, N. Takashi, M. Uo, T. Akasaka, Y. Totsuka,  
F. Watari  
Hokkaido University, Japan

#### OS4-4-4

" Nano-Fabrications by Artificial Peptides and Proteins "  
K. Sano, K. Shiba  
Japanese Foundation for Cancer Research, Japan

13:00 - 15:20

OS7 Social Energy System

*Chair : M. Katayama (Nagoya University)*

#### OS7-1-1 **Keynote Lecture**

" Introduction of REPLI Project for Efficient Energy Management with Communication "  
G. Bumiller<sup>(1)</sup>, T. Sauter<sup>(2)</sup>  
(1) iAd GmbH, Großhabersdorf, Germany  
(2) Austrian Academy of Sciences, Austria

#### OS7-1-2

" "Energy Chain", A New Concept in Evaluating Future Energy Conservation and Greenhouse Abatement Alternatives and Effectiveness "  
K. Hashimoto, T. Takahashi, M. Saikawa  
Central Research Institute of Electric Power Industry, Japan

#### OS7-1-3

" Evaluation of Energy Systems by Considering Changes in Energy Transmission Infrastructure "  
T. Kato, N. Tsujimoto, Y. Suzuoki, A. Ishikawa  
Nagoya University, Japan

#### OS7-1-4

" A Comparison between Loop and Radial Configuration of FRIENDS "  
Y. Mishima, T. Satoh, K. Nara  
Ibaraki University, Japan

#### OS7-1-5

" How to Set the Energy Saving Consensus at Nagoya University - Introduction of Interactive 'eco-QC' through Online - "  
Y. Arayama, Y. Doi, S. Watanabe, D. Yu  
Nagoya University, Japan

#### OS7-1-6

" Social Psychological Approach to Implementation of Social Policy for Energy Management System "  
K. Karasawa  
Nagoya University, Japan

15:40 - 17:40

OS3 Advanced Energy Materials

*Chair : T. Itoh (Nagoya University)*

#### OS3-1-1 **Keynote Lecture**

" Thermoelectric Modules for High Temperature Waste Heat "  
R. Funahashi<sup>(1,2)</sup>, T. Mihara<sup>(1)</sup>, M. Mikami<sup>(1,2)</sup>,  
S. Urata<sup>(1)</sup>, N. Ando<sup>(1)</sup>  
(1) National Institute of Advanced Industrial Science and Technology, Japan  
(2) CREST, Japan Science and Technology Agency, Japan

*Chair : R. Funahashi (National Institute of Advanced Industrial Science and Technology)*

**OS3-1-2**

" Syntheses of Fe and La Doped CoSb<sub>3</sub> Thermoelectric Compounds by Pulse Discharge Sintering "

T. Itoh, E. Hattori, K. Kitagawa  
Nagoya University, Japan

**OS3-1-3**

" Characterization of MnSi<sub>1.7</sub> Powder Prepared by Gas Atomization "

M. Hashii<sup>(1)</sup>, N. Kanetake<sup>(2)</sup>

(1) Nagoya Municipal Industrial Research Institute,  
Japan

(2) Nagoya University, Japan

**OS3-1-4**

" Powder Recovery from Y-TZP Ceramics Using Hydrothermal Treatment "

M. Kamiya<sup>(1)</sup>, Y. Mori<sup>(1)</sup>, T. Kojima<sup>(2)</sup>, R. Sasai<sup>(1)</sup>,  
H. Itoh<sup>(1)</sup>

(1) Nagoya University, Japan

(2) Chiba University, Japan

**OS3-1-5**

" Temperature Dependent Thermal Conductivity of Nano-rods-in-oil Nanofluids "

Z. Han, B. Yang

University of Maryland, USA

## **Room E (IB011)**

10:10 - 11:30

**OS5 Green Production (1)**

*Chair : K. Suzuki (Nagoya University)*

**OS5-1-1 Keynote Lecture**

" Ordered Mesoporous Materials as Catalysts for 'Green' Synthesis of Fine Chemicals "

S. Sivasanker

National Chemical Laboratory, India

**OS5-1-2**

" Construction of the Bio-Mimetic Reaction Site in Ordered Mesoporous Phenylene Silica (ph-HMM) "

M. Ohashi, S. Inagaki

Toyota Central R&D Labs., Inc., Japan

**OS5-1-3**

" Design of Functionalized Hydrotalcite Catalysts for Carbon–Carbon Bond Formations and Aerobic Oxidations "

K. Ebitani, K. Motokura, K. Mori, T. Mizugaki, K. Kaneda

Osaka University, Japan

13:00 - 15:20

**OS5 Green Production (2)**

*Chair : T. Tagawa (Nagoya University)*

**OS5-2-1 Keynote Lecture**

" Advances in Green Chemical Engineering and Process Technology "

H. Liu, J. Chen, Y. Zhang, S. Zhang

Chinese Academy of Sciences, China

**OS5-2-2**

" Promotion Effect of Hydrogen on Catalytic Performances of Supported Metal (Ag, Pt, Ir) Catalysts in Selective Catalytic Reaction of NO "

A. Satsuma, J. Shibata, K. Shimizu, H. Yoshida,

T. Hattori

Nagoya University, Japan

**OS5-2-3**

" Rare Earth Metal Triflate Catalyzed Chloromethylation of Aromatic Hydrocarbons "

T. Kishida<sup>(1)</sup>, T. Yamauchi<sup>(1)</sup>, K. Komura<sup>(2)</sup>,

Y. Kubota<sup>(2)</sup>, Y. Sugi<sup>(2)</sup>

(1) Nissei Kagaku Kogyosho, Japan

(2) Gifu University, Japan

*Chair : A. Satsuma (Nagoya University)*

**OS5-2-4**

" Catalyst Performance of Calcium-Ferrite Based Compounds for Oxidation of Propylene in the Motor-Bicycle Exhaust "

D. Hirabayashi, T. Yoshikawa, K. Mochizuki,

Y. Kojima, K. Suzuki

Nagoya University, Japan

**OS5-2-5**

" Photocatalytic Aerobic Oxidation of Neat Alkanes over Supported Vanadium Oxides "

T. Tanaka, K. Teramura, T. Hosokawa, T. Ohuchi

Kyoto University, Japan

**OS5-2-6**

" General Aspects of Photoactive Sites on Silica-Based Photocatalysts for Direct Conversion of Methane "

L. Yuliati, H. Ito, H. Yoshida

Nagoya University, Japan

15:40 - 18:00

**OS5 Green Production (3)**

*Chair : H. Yoshida (Nagoya University)*

**OS5-3-1**

" Photocatalytic Water Splitting on Ni-Intercalated Layered Perovskite Tantalate H<sub>2</sub>La<sub>2</sub>/3Ta<sub>2</sub>O<sub>7</sub> "

K. Shimizu<sup>(1)</sup>, S. Itoh<sup>(2)</sup>, K. Toda<sup>(2)</sup>

(1) Nagoya University, Japan

(2) Niigata University, Japan

### OS5-3-2

" Preparation of Visible Light Responsive TiO<sub>2</sub> Thin Film Photocatalysts by Magnetron Sputtering Method and Their Photocatalytic Activities "

M. Matsuoka<sup>(1)</sup>, M. Kitano<sup>(1)</sup>, M. Takeuchi<sup>(1)</sup>, M. Anpo<sup>(1)</sup>, J. M. Thomas<sup>(2)</sup>

(1) Osaka Prefecture University, Japan

(2) The Royal Institution of Great Britain, UK

### OS5-3-3

" Enhancement of Photocatalytic Activity of NiO-Loaded TiO<sub>2</sub> by N Ion Irradiation "

N. Matsunami<sup>(1)</sup>, K. Hirooka<sup>(1)</sup>, S. Ninad<sup>(1)</sup>, O. Fukuoka<sup>(1)</sup>, T. Shimura<sup>(1)</sup>, M. Tazawa<sup>(2)</sup>

(1) Nagoya University, Japan

(2) National Institute of Advanced Industrial Science and Technology, Japan

### OS5-3-4

" Development of Green Gas Supply System for Zero-emission Plasma Nan-processing "

S. Takahashi<sup>(1)</sup>, S. Den<sup>(1)</sup>, T. Katagiri<sup>(1)</sup>, K. Yamakawa<sup>(1)</sup>, H. Kano<sup>(2)</sup>, M. Hori<sup>(3)</sup>

(1) Katagiri Engineering Co. Ltd, Japan

(2) NU-EcoEngineering Co. Ltd, Japan

(3) Nagoya University, Japan

*Chair : N. Isu (INAX Corp.)*

### OS5-3-5

" Fundamental Study on a Low-Emission Type Building Material "

Y. Nishigaki<sup>(1)</sup>, K. Suzuki<sup>(2)</sup>, T. Kameyama<sup>(3)</sup>

(1) Gifu Prefectural Government, Japan

(2) Nagoya University, Japan

(3) National Institute of Advanced Industrial Science and Technology, Japan

### OS5-3-6

" High Temperature Oxidation-Resistance Inorganic Coating Used for Steel Slab "

L. Wei<sup>(1)</sup>, S. Ye<sup>(1)</sup>, R. Liu<sup>(2)</sup>, X. Yang<sup>(2)</sup>, Z. Cai<sup>(1,2)</sup>, P. Liu<sup>(1)</sup>, Y. Chen<sup>(1)</sup>, Y. Xie<sup>(1)</sup>

(1) Chinese Academy of Sciences, China

(2) Jinan Iron and Steel Group Co., China

### OS5-3-7

" Multi-Objective Approach for Supporting Design-for-Disassembly towards Efficient Material Re-utilization "

Y. Shimizu, Y. Yamada, N. Desmira

Toyohashi University of Technology, Japan

## Lobby (1st Floor)

10:10 - 17:00

### Poster Presentation 2

#### OS3-P-6

" Preparation of a Novel Zeolite-Based Water Adsorbent for Adsorption Heat Pump and Desiccant Air-Conditioning System "

S. Shimooka, M. Iwade, K. Oshima, M. Yamazaki, T. Takewaki, H. Kakiuchi

Mitsubishi Chemical Group, Science and Technology Research Center, Japan

#### OS3-P-7

" Water uptake and infrared absorption in La<sub>2</sub>Zr<sub>1.95</sub>M<sub>0.05</sub>O<sub>7-α</sub> (M = In, Yb, Er and Y) "

T. Ito, T. Nagasaki, K. Iwasaki, M. Yoshino, T. Matsui  
Nagoya University, Japan

#### OS3-P-8

" Studies on a New PCM Based on Trimethylolethane Trihydrate-Urea Mixture for Cold Heat Storage "

H. Hidaka<sup>(1)</sup>, M. Yamazaki<sup>(1)</sup>, M. Yabe<sup>(1)</sup>,

H. Kakiuchi<sup>(1)</sup>, F. Watanabe<sup>(2)</sup>, H. Matsuda<sup>(2)</sup>

(1) Mitsubishi Chemical Group Science and Technology Research Center, Japan

(2) Nagoya University

#### OS4-P-1

" Size-Focusing of Semiconductor Nanocrystals Observed by MALDI-TOF Mass Spectroscopy "

T. Kuzuya, Y. Tai, S. Yamamuro, K. Sumiyama  
Nagoya Institute of Technology, Japan

#### OS4-P-2

" Synthesis and FET Properties of Alkyl Substituted HBCs "

H. Takeuchi, T. Mori, Y. Kikuzawa

Toyota Central R & D Labs., Inc., Japan

#### OS4-P-3

" Electron Holography Study of III-Nitride Semiconductors on Si Substrate "

S. Tanaka, A. Naito, R. Iwasaki, M. Ichihashi

Nagoya University, Japan

#### OS4-P-4

" Application of Non-Crystalline Nano-Tube Imogolite as Heat Exchange Adsorbents of the Heat Pump System "

M. Suzuki, J. Honda, K. Inukai, M. Maeda

National Institute of Advanced Industrial Science and Technology, Japan

#### OS4-P-5

" Three-Dimensional Analysis of Catalytic Platinum Supercrystals by Transmission Electron Tomography "

J. Yamasaki<sup>(1)</sup>, A. Ohno<sup>(1)</sup>, M. Makihara<sup>(1)</sup>,

O. Terasaki<sup>(2)</sup>, N. Tanaka<sup>(1)</sup>

(1) Nagoya University, Japan

(2) University of Stockholm, Sweden

- OS4-P-6**  
 " Functions of Artificial Glyco-Polymer/CNTs Conjugates "  
 T. Akasaka<sup>(1)</sup>, M. Uo<sup>(1)</sup>, F. Watari<sup>(1)</sup>, Y. Sato<sup>(2)</sup>, K. Tohji<sup>(2)</sup>  
 (1) Hokkaido University, Japan  
 (2) Tohoku University, Japan
- OS4-P-7**  
 " EC Properties of Biomimetic InN Films Prepared by Oblique-angle Sputter Deposition "  
 J. Yamazaki, T. Kuranaga, Y. Inoue, O. Takai  
 Nagoya University, Japan
- OS4-P-8**  
 " A Local Structure of Ni Impurity in Carbon Nanotube Studied by XAFS and Multiple Scattering Analysis "  
 K. Asakura, W-J. Chun, M. Ushiro, K. Uno, T. Fujikawa, Y. Sato, K. Tohji, F. Watari  
 Hokkaido University, Japan
- OS4-P-9**  
 " Carbon Nanotubes as Scaffolds for Cell Culture "  
 N. Aoki<sup>(1)</sup>, A. Yokoyama<sup>(1)</sup>, T. Akasaka<sup>(1)</sup>, M. Uo<sup>(1)</sup>, Y. Sato<sup>(2)</sup>, K. Tohji<sup>(2)</sup>, F. Watari<sup>(1)</sup>  
 (1) Hokkaido University, Japan  
 (2) Tohoku University, Japan
- OS4-P-10**  
 " Tissue Response to Carbon Nanosubstances: Comparison between Carbon Nanotubes and Hat-Stacked Carbon Nanofibers with Transmission Electron Microscopy "  
 A. Yokoyama<sup>(1)</sup>, Y. Sato<sup>(2)</sup>, Y. Nodasaka<sup>(1)</sup>, S. Yamamoto<sup>(1)</sup>, N. Aoki<sup>(1)</sup>, M. Shindoh<sup>(1)</sup>, T. Kohgo<sup>(1)</sup>, T. Akasaka<sup>(1)</sup>, M. Uo<sup>(1)</sup>, K. Tohji<sup>(2)</sup>, F. Watari<sup>(1)</sup>  
 (1) Hokkaido University, Japan  
 (2) Tohoku University, Japan
- OS4-P-11**  
 " Sintering Behavior of Nanometer-size CeO<sub>2</sub> Powders "  
 M. Ozawa  
 Nagoya Institute of Technology, Japan
- OS4-P-12**  
 " Synthesis and Characterization of Metal-doped ZnO Particle/Organic Hybrid "  
 M. Kachi, W. Sakamoto, T. Yogo  
 Nagoya University, Japan
- OS4-P-13**  
 " In Situ Synthesis of MnFe<sub>2</sub>O<sub>4</sub> Particle/Organic Hybrid Material "  
 T. Hosoya, W. Sakamoto, T. Yogo  
 Nagoya University, Japan
- OS4-P-14**  
 " Synthesis of Nano-Sized SnO<sub>2</sub> Particle /Organic Hybrid "
- D. Yamamoto, W. Sakamoto, T. Yogo  
 Nagoya University, Japan
- OS4-P-15**  
 " Study on the Resolution of Pore Structure Analysis by Means of Helium Adsorption under Cryogenic Condition "  
 K. Tsuduki, J. Kobayashi, N. Kobayashi  
 Nagoya University, Japan
- OS4-P-16**  
 " Low Temperature Synthesis of ZnO Thin Films through Photocalcination "  
 J. Hieda, N. Saito, O. Takai  
 Nagoya University, Japan
- OS4-P-17**  
 " XAFS Analysis of Rarely Contained Metallic Elements in Biological Tissues "  
 M. Uo, K. Asakura, A. Yokoyama, K. Tamura, Y. Totsuka, T. Akasaka, F. Watari  
 Hokkaido University, Japan
- OS4-P-18**  
 " Bioassay Methods for Cytotoxicity of Nanoparticles in Aquatic Environment by Using Paramecium "  
 N. Haga, K. Haneda  
 Senshu University, Japan
- OS4-P-19**  
 " Fabrication and Properties Sintered Carbon Nanotubes "  
 W. Wang<sup>(1)</sup>, A. Yokoyama<sup>(1)</sup>, M. Omori<sup>(2)</sup>, S. Liao<sup>(1)</sup>, T. Akasaka<sup>(1)</sup>, M. Uo<sup>(1)</sup>, F. Watari<sup>(1)</sup>  
 (1) Hokkaido University, Japan  
 (2) Tohoku University, Japan
- OS4-P-20**  
 " Synthesis of Hydrophobic Hard Films by Plasma-Enhanced CVD with Novel Organosilicon Reactants "  
 E. Oriyama<sup>(1)</sup>, T. Yoshida<sup>(1)</sup>, Y. Inoue<sup>(1)</sup>, O. Takai<sup>(1)</sup>, D. Hara<sup>(2)</sup>, K. Yoshida<sup>(2)</sup>  
 (1) Nagoya University, Japan  
 (2) TOSOH Corp., Japan
- OS4-P-21**  
 " Effects of Cell Growth and Function by Addition of Carbon Nanotubes and Nano/Micro Particles on Mammalian Cells in Culture "  
 M. Ibi, A. Ishisaki, Y. Sato, K. Toji, A. Nakashima, A. Yokoyama, M. Tamura  
 Hokkaido University, Japan
- OS4-P-22**  
 " Two-Dimensional Micrometer-Sized Silicon Nanosheets Derived from CaSi<sub>2</sub> "  
 H. Nakano, M. Ishii, H. Nakamura  
 Toyota Central R&D Labs., Inc., Japan
- OS4-P-23**  
 " Biosynthesis of Gold Nanoparticles Using the Anaerobic Bacterium, Shewanella Algae "

Y. Konishi, T. Tsukiyama, K. Ohno, N. Saitoh,  
T. Nomura, S. Nagamine  
Osaka Prefecture University, Japan

**OS4-P-24**

" Increase of Oxygen Vacancies and Change of Crystal Structures in Photo-Decomposition Process of TiO<sub>2</sub> Thin Films Detected in Dedicated In-Situ TEM "

K. Yoshida, J. Yamasaki, N. Tanaka  
Nagoya University, Japan

**OS4-P-25**

" Production and Nano Level Structure Analysis of High Purity Rutile TiO<sub>2</sub> Thin Films by Pulse Laser Deposition Method "

T. Nanbara, K. Yoshida, J. Yamasaki, N. Tanaka  
Nagoya University, Japan

**OS5-P-1**

" Chlorine Free Friedel-Crafts Acylation of Benzene with Acid Anhydride on Insoluble Heteropoly Acid Catalyst "

T. Tagawa, J. Amemiya, H. Yamada  
Nagoya University, Japan

**OS5-P-2**

" Fixation of Iodine Gas for Trans Uranium Waste Disposal "

M. Suzuki<sup>(1)</sup>, D. Hirabayashi<sup>(2)</sup>, K. Suzuki<sup>(2)</sup>  
(1) National Institute of Advanced Industrial Science and Technology, Japan  
(2) Nagoya University, Japan

**OS5-P-3**

" Prevention of Photocatalytic Deterioration in Organic Material by Using TiO<sub>2</sub> Pillared Clay for Composition of TiO<sub>2</sub> Photocatalyst and Organic Material "

C. Ooka<sup>(1)</sup>, K. Iida<sup>(1)</sup>, M. Harada<sup>(1)</sup>, K. Hirano<sup>(1)</sup>,  
Y. Nishi<sup>(1)</sup>, M. Kawaguchi<sup>(2)</sup>, T. Hibino<sup>(2)</sup>,  
S. Takenaka<sup>(2)</sup>, T. Hattori<sup>(2)</sup>  
(1) Nagoya Municipal Industrial Research Institute, Japan  
(2) Daito ME Co., Ltd., Japan

**OS5-P-4**

" Oxidative Destruction of Hydrocarbons over a New Zeolite-like Ca<sub>12</sub>Al<sub>10</sub>Si<sub>4</sub>O<sub>35</sub> Crystal with Occluding O<sub>2</sub>- and O<sub>22</sub>- Radicals in Nanopores "

K. Suzuki<sup>(1)</sup>, S. Fujita<sup>(1)</sup>, T. Mori<sup>(2)</sup>,  
D. Hirabayashi<sup>(3)</sup>, H. Masuda<sup>(4)</sup>  
(1) National Institute of Advanced Industrial Science and Technology, Japan  
(2) Hirosaki University, Japan  
(3) Nagoya University, Japan  
(4) Nagoya Institute of Technology, Japan

**OS5-P-5**

" Oxidative Decomposition of Propylene over Direct Synthesized Ca<sub>12</sub>Al<sub>10</sub>Si<sub>4</sub>O<sub>35</sub> Catalysts "

K. Mochizuki, D. Hirabayashi, Y. Kojima, K. Suzuki  
Nagoya University, Japan

**OS5-P-6**

" Hydrothermally Solidified Mesoporous Material from Water Purification Sludge "

N. Isu, H. Maenami  
INAX Corp., Japan

**OS5-P-7**

" Producing Plastic Substitute from Bamboo for Sustainable Development "

O. Yamashita, H. Yokochi, H. Imanishi, K. Kanayama  
Nagoya University, Japan

**OS6-P-1**

" High Grade Recycling of Magnesium Alloy Machined Chips "

M. Inoue, M. Shima, M. Iwai  
Toyama National College of Technology, Japan

**OS6-P-2**

" A Study of Adsorber Specification of Compact Adsorption Refrigerator for Automobiles "

S. Inoue, S. Inoue, N. Kobayashi  
Denso Corporation, Japan

**OS6-P-3**

" Research on Improvement in a Performance of an Adsorption Refrigerator (The Effect of Multistage Adsorption in High Ambient Temperature) "

S. Inoue, S. Inoue, N. Kobayashi  
Denso Corporation, Japan

**OS6-P-4**

" Effect of Coexisting Gas of H<sub>2</sub>O and CO<sub>2</sub> on Dry HCl Sorption on CaO and Na<sub>2</sub>CO<sub>3</sub> Sorbent "

S. Ando<sup>(1)</sup>, Y. Inoue<sup>(1)</sup>, N. Tanahashi<sup>(2)</sup>, Y. Kojima<sup>(1)</sup>,  
H. Matsuda<sup>(1)</sup>  
(1) Nagoya University, Japan  
(2) Chubu Electric Power Co., Inc., Japan

**OS6-P-5**

" Removal of Copper from Plating Wastewater by Precipitation with H<sub>2</sub>S "

H. Kondo<sup>(1)</sup>, T. Fukuta<sup>(2)</sup>, Y. Kojima<sup>(1)</sup>, H. Matsuda<sup>(1)</sup>  
(1) Nagoya University, Japan  
(2) Sanshin MFG. Co., Ltd., Japan

**OS6-P-6**

" Resource Recovery Treatment by Solubilization of Waste Sludge "

T. Nomura, S. Araki, T. Nagao, Y. Konishi  
Osaka Prefecture University, Japan

**OS6-P-7**

" Adhesion of Methanogens to Support Materials "

T. Nagao, T. Nomura, Y. Konishi  
Osaka Prefecture University, Japan

**OS6-P-8**

" Mechanical Separation of Copper from PVC Coated Lead Wire by Rolling "

S. Yokoyama, H. Hashimoto, M. Kawakami, S. Maki  
Toyohashi University of Technology, Japan



- OS6-P-9**  
 " Adsorption Reaction of CO<sub>2</sub> to CaO and Waste Cement under Dry Grinding "  
 S. Yokoyama, N. H. B. M. Nor, Y. Nagao, S. Motozuka, M. Kawakami  
 Toyohashi University of Technology, Japan
- OS6-P-10**  
 " Volatilization Behavior of Heavy Metals from Solid Wastes by Chlorination Reaction "  
 T. Kawachi<sup>(1)</sup>, S. Mizuno<sup>(1)</sup>, K. Nakayama<sup>(2)</sup>, F. Watanabe<sup>(1)</sup>, Y. Kojima<sup>(1)</sup>, H. Matsuda<sup>(1)</sup>  
 (1) Nagoya University, Japan  
 (2) Sintokogio, Ltd., Japan
- OS6-P-11**  
 " Effect of Silica-Aluminum-Iron Oxides on Reductive Decomposition of Gypsum "  
 N. Mihara, Y. Kojima, H. Matsuda  
 Nagoya University, Japan
- OS6-P-12**  
 " Improvement of Methane Fermentation Using Immobilized Methanogens on Support Materials "  
 H. Tokumoto, K. Nishiguchi, H. Yoshida  
 Osaka Prefecture University, Japan
- OS6-P-13**  
 " High Speed and Efficient Methane Fermentation Process for Excess Sludge Treated by Sub-Critical Water Hydrolysis Technique "  
 H. Tokumoto, R. Isii, H. Yoshida  
 Osaka Prefecture University, Japan
- OS6-P-14**  
 " Sonication of Organochlorinated Herbicide Adsorbed on Model Soil "  
 Y. Kojima<sup>(1)</sup>, Y. Hagi<sup>(1)</sup>, T. Fujita<sup>(1)</sup>, E. P. Ona<sup>(1)</sup>, D. Hirabayashi<sup>(1)</sup>, K. Suzuki<sup>(1)</sup>, H. Matsuda<sup>(1)</sup>, Y. Asakura<sup>(2)</sup>  
 (1) Nagoya University, Japan  
 (2) Honda Electronics Co., Ltd., Japan
- OS6-P-15**  
 " Development of a High Performance Cake-less Continuous Filtration System "  
 J. Tsubaki<sup>(1)</sup>, T. Mori<sup>(1)</sup>, B. Ochirhuyag<sup>(1)</sup>, K. Ato<sup>(1)</sup>, H. Choi<sup>(2)</sup>, T. Sugimoto<sup>(3)</sup>  
 (1) Nagoya University, Japan  
 (2) Nagoya Industrial Science Research Institute, Chubu TLO, Japan  
 (3) Chuo Kakohki Co., Ltd., Japan
- OS7-P-1**  
 " Development of Optimal Control System for Energy Saving in Factories Using Energy-Flow-Integration Method "  
 H. Uchigasaki<sup>(1)</sup>, Y. Harada<sup>(1)</sup>, M. Mori<sup>(1)</sup>, H. Kudo<sup>(2)</sup>  
 (1) Hitachi, Ltd., Japan  
 (2) The Energy Conservation Center, Japan

## Conference Hall

18:00 - 18:20

Closing Ceremony