

ORGANIZING COMMITTEE

Conference chair:

Dr. Takeshi Takahashi, Director of Energy Engineering Research Laboratory (CRIEPI)

Conference co-chair

Dr. Hisao Makino, Deputy Director of Energy Engineering Research Laboratory (CRIEPI)

Prof. Jun-ichiro Hayashi, Institute of Materials Chemistry and Engineering (Kyushu Univ.)

Prof. Lijun Yu, Shanghai Jiao Tong University (SJTU)

Organizing committee members:

Prof. Guangyi Cao, Shanghai Jiao Tong University (SJTU)

Prof. Soshu Kirihara, Joining and Welding Research Institute (Osaka Univ.)

Dr. Mingruo Hu, Shanghai Jiao Tong University (SJTU)

Dr. Hee-Chun Lim, Strategic Technology Laboratory (KEPCO Research Institute)

Dr. Hiroshi Morita, Energy Engineering Research Laboratory (CRIEPI)

Prof. Makio Naito, Joining and Welding Research Institute (Osaka Univ.)

Prof. Koyo Norinaga, Institute for Materials Chemistry and Engineering (Kyushu Univ.)

Dr. Hiromi Shirai, Energy Engineering Research Laboratory (CRIEPI)

Dr. Takao Watanabe, Energy Engineering Research Laboratory (CRIEPI)

Prof. Yiwu Weng, Shanghai Jiao Tong University (SJTU)

General secretary:

Prof. Masahiro Usami, Research and Education Center of Carbon Resources (Kyushu Univ.)

Dr. Hiroaki Watanabe, Energy Engineering Research Laboratory (CRIEPI)

PREFACE

Clean Coal Technology (CCT) & Fuel Cells (FCs) are the key technology options to contribute to the sustainable development in 21st century. The international conference on CCT & FCs is held on November 8th –10th, 2011, in Fukuoka, Japan, organized by CRIEPI and Research and Education Center of Carbon Resources, Kyushu University, in cooperation with SJTU, KEPCO, JWRI, IERE and Society of Chemical Engineers, Japan. Key academic and industry speakers are invited to discuss the state of the art in worldwide clean energy technology developments for advanced coal utilization systems and various kinds of fuel cells.

PROGRAM

First Day: November 8th

Registration

Location: Room A (Chikushi Hall, C-Cube Bldg. 1F)

Start at 8:30

Opening address

Location: Room A (Chikushi Hall, C-Cube Bldg. 1F)

Duration 9:00 – 9:30

Session Chair: Prof. Koyo Norinaga (Kyushu Univ.)

"Welcome to CCT & FCs - 2011"

Dr. Hisao Makino, *CRIEPI*, Japan

Prof. Jun-ichiro Hayashi, *Kyushu Univ.*, Japan

Prof. Guangyi Cao, *Shanghai Jiao Tong Univ.*, P. R. China

Dr. Hee-Chun Lim, *KEPCO Research Institute*, R. Korea

Prof. Makio Naito, *Osaka Univ.*, Japan

Plenary Lectures:

Location: Room A (Chikushi Hall, C-Cube Bldg. 1F)

Duration 9:30 – 11:30

Session Chair: Dr. Hisao Makino (CRIEPI)

(60 min. for each presentation)

Prof. Jun-ichiro Hayashi (Kyushu Univ.)

Plenary 1 Chikao Kanaoka*

* *Professor Emeritus of Kanazawa Univ.*, Japan

"High Temperature Dust Collection Technology – Past and Future –"

Plenary 2 David J. Harris*, Daniel G. Roberts*

* *CSIRO Energy Technology*, Australia

"Australian R&D Supporting the Transition to High Efficiency, Low Emission Power Generation Technologies"

Lunch (Lunch box provided at C-Cube Bldg. 1F, 3F Lounge Hall, #301, #303 rooms available)

Duration 11:30 – 12:30

Keynote Lectures 1 (parallel session): Clean Coal Technology (CCT)

Location: Room A (Chikushi Hall, C-Cube Bldg. 1F)

Duration 12:30 – 14:30 (40 min. for each presentation)

Session Chair: Dr. Saburo Hara (CRIEPI)

CCT keynote 1 Keiji Makino*, Michiaki Harada*

* *Japan Coal Energy Center (JCOAL)*, Japan

"Forecast of Advanced Technology Adoption for Coal Fired Power Generation towards the Year of 2050"

CCT keynote 2 Hiroshi Sasatsu*

* *Electric Power Development Co., Ltd. (J-POWER)*, Japan

"J-POWER's CCT Activities – for Establishment of Low Carbon Society – "

CCT keynote 3 Juhun Song*

* *School of Mechanical Engineering, Pusan National Univ.*, R. Korea

"Overview of Coal Combustion Research and Education in Pusan Clean Coal Center"

Coffee Break (Chikushi Hall, C-Cube Bldg. 1F)

Duration 14:30 – 14:50

Keynote Lectures 1 (parallel session): Fuel Cells (FCs)

Location: Room B (#3 Lecture Room, E Bldg. 1F)

Duration 12:30 – 14:30 (40 min. for each presentation)

Session Chair: Dr. Takao Watanabe (CRIEPI)

FCs keynote 1 Mingruo Hu^{*}, Guangyi Cao^{*}

^{*} *Institute of Fuel Cell, Shanghai Jiao Tong Univ., P. R. China*

"The Status of the Fuel Cell Research and Development in China"

FCs keynote 2 Makio Naito^{*}, Hiroya Abe^{*}, Akira Kondo^{*}

^{*} *JWRI, Osaka Univ., Japan*

"Smart Powder Processing for Energy-saving and Material Recycling"

FCs keynote 3 Dooh-Hwan Jung^{*}

^{*} *Korea Institute of Energy Research (KIER), R. Korea*

"Development of Nano and Meso carbons for Fuel Cell Application"

Coffee Break (#3 Lecture Room, E Bldg. 1F)

Duration 14:30 – 14:50

Oral Presentations 1 (parallel session): Clean Coal Technology (CCT)

Location: Room A (Chikushi Hall, C-Cube Bldg. 1F)

Duration 14:50 – 17:10 (20 min. for each presentation) Session Chair: Prof. Koyo Norinaga (Kyushu Univ.)

- CCT_Or_1** Koichi Matsuoka^{*}, Koji Kuramoto^{*}, Yoshizo Suzuki^{*}
^{*} *National Institute of Advanced Industrial Science and Technology (AIST)*, Japan
"Enhancement of coal gasification by physically separating pyrolysis zone from gasification zone in a circulating fluidized bed gasification system"
- CCT_Or_2** Sohey Nozawa^{*}, Nozomi Wada^{*}, Yohsuke Matsushita^{*}, Tatsuro Harada^{**}
^{*} *Research and Education Center of Carbon Resources, Kyushu Univ.*, Japan
^{**} Research Laboratory, Kyushu Electric Power Co., Ltd., Japan
"Experimental and Numerical Investigation of Effect of Coal Kinds on Termination Time for Coal Char Gasification"
- CCT_Or_3** Young-Kwang Kim^{*}, Lifang Hao^{*}, Joo-Il Park^{*}, Jin Miyawaki^{**}, Isao Mochida^{***}, Seong-Ho Yoon^{***}
^{*} *Interdisciplinary Graduate School of Engineering Science, Kyushu Univ.*, Japan
^{**} *Institute of Materials Chemistry and Engineering, Kyushu Univ.*, Japan
^{***} *Research and Education Center of Carbon Resources, Kyushu Univ.*, Japan
"Low Temperature Catalytic Steam Gasification of Lignite by using Potassium Carbonate supported on Perovskite Oxide"
- CCT_Or_4** Min Chul Lee^{*}, Seok Bin Seo^{*}
^{*} *KEPCO Research Institute*, R. Korea
"Ambient and High Pressure Tests on the Syngas Turbine Combustion"
- CCT_Or_5** Atul Sharma^{*}, Toshimasa Takanohashi^{*}
^{*} *National Institute of Advanced Industrial Science and Technology (AIST)*, Japan
"Direct Production of FT-suitable Synthesis Gas from Catalytic Coal Gasification"
- CCT_Or_6** Mitsuhiro Yoshida^{*}
^{*} *Clean Coal Power R&D Co., Ltd.*, Japan
"Clean Coal Demonstration Plant of 250MW Air-Blown IGCC in Japan"
- CCT_Or_7** Hidehiro Kamiya^{*}, Kentaro Hada^{*}, Tomoya Sekizawa^{*}, Mayumi Tsukada^{*}, Wuled Lenngoro^{*}, Masashi Wada^{**}, Naoki Noda^{***}, Hisao Makino^{***}, Wladyslaw, Szymanski^{****}
^{*} *Tokyo University of Agriculture and Technology*, Japan, ^{**} *Ishikawa National College of Technology*, Japan, ^{***} *CRIEPI*, Japan, ^{****} *University of Vienna*, Australia
"Measurement and analysis of PM2.5 and condensable nanoparticle emission behavior from coal combustion"
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Conference Dinner

Location: Dining room in Chikushi Campus

Duration 17:30 – 20:00

Oral Presentations 1 (parallel session): Fuel Cells (FCs)

Location: Room B (#3 Lecture Room, E Bldg. 1F)

Duration 14:50 – 17:10 (20 min. for each presentation)

Session Chair: Dr. Hee-Chun Lim (KEPCO RI)

- FC_Or_1** Changxing Yang*, Mingruo Hu*, Qingchun Yu*, Guangyi Cao*
* *Green Electrochemical System and Structure Lab., Institute of Fuel Cell, Shanghai Jiao Tong Univ., P. R. China*
"The Optimization of Anode Catalyst Structure of PEMFC For CO Tolerance"
- FC_Or_2** Tak-Hyoung Lim*, Jong-Won Lee*, Seung-Bok Lee*, Seok-Joo Park*, Rak-Hyun Song*, Dong-Ryul Shin*
* *Fuel Cell Research Center, Korea Institute of Energy Research (KIER), R. Korea*
"Fabrication and operation of a 1 kW class anode-supported flat tubular SOFC stack"
- FC_Or_3** Taehee Lee*, Mi-hwa Choi*, Young-Sung Yoo*
* *Green Growth Technology Laboratory, KEPCO Research Institute, R. Korea*
"The Design and Operation Result of 5 kW-class SOFC Systems for a CHP Unit"
- FC_Or_4** Sung Pil Yoon*, Jeong Woo Yun**, Jonghee Han*, Heesu Kim*, Suk Woo Nam*
* *Fuel Cell Reseach Center Korea Institute of Science & Technology, R. Korea*
** *School of Applied Chemical Engineering, Chonnam Nationa Univ., R. Korea*
"Effect of the $\text{Sm}_{0.2}\text{Ce}_{0.8}\text{O}_{2-\delta}$ modification for H_2S tolerance in a Ni-based anode for solid oxide fuel cells"
- FC_Or_5** Masahiro Yoshikawa*, Tohru Yamamoto*, Kenji Yasumoto*, Koichi Asano*, Yoshihiro Mugikura*, Yoshiyuki Izaki*, Takao Watanabe*
* *Central Research Institute of Electric Power Industry (CRIEPI), Japan*
"Development of performance evaluation technology for long term durability and reliability of SOFCs"
- FC_Or_6** Bo Huang*, Xin-Jian Zhu*
* *Institute of Fuel Cell, Shanghai Jiao Tong Univ., P. R. China*
"Characterization of a Cu-LSCM-CeO₂/LSCM-YSZ/Ni-ScSZ three-layer structure anode in thin film Solid Oxide Fuel Cell running on methane fuel"
- FC_Or_7** Masashi Mori*, Kaoru Nakamura*
* *Central Research Institute of Electric Power Industry (CRIEPI), Japan*
"Evaluation of $(\text{Sr}_{0.7}\text{La}_{0.3})_{1-x}\text{TiO}_3$ ($0 \leq x \leq 0.15$) perovskites as SOFC interconnect materials"

Conference Dinner

Location: Dining room in Chikushi Campus

Duration 17:30 – 20:00

Second Day : November 9th

Registration

Location: Room A (Chikushi Hall, C-Cube Bldg. 1F)

Start at 8:30

Keynote Lectures 2 (parallel session): Clean Coal Technology (CCT)

Location: Room A (Chikushi Hall, C-Cube Bldg. 1F)

Duration 9:00 – 10:20 (40 min. for each presentation)

Session Chair: Dr. Hiromi Shirai (CRIEPI)

- CCT keynote 4** Takayuki Takarada^{*}
^{*} *Department of Chemical & Environmental Engineering, Graduate School of Engineering, Gunma Univ., Japan*
"Low temperature gasification of brown coal and biomass using catalyst"
- CCT keynote 5** Kook-Young Ahn^{*}
^{*} *Korea Institute of Machinery & Materials (KIMM), R. Korea*
"An Overview of CO₂ Capturing Oxyfuel Combustion Technology at KIMM"

Oral Presentation 2 (parallel session): Clean Coal Technology (CCT)

Location: Room A (Chikushi Hall, C-Cube Bldg. 1F)

Duration 10:20 – 11:00 (20 min. for each presentation)

Session Chair: Dr. Hiromi Shirai (CRIEPI)

- CCT_Or_8** Yosuke Tsuboi^{*}, Toshiyuki Suda^{*}, Makoto Takajuji^{*}, Hidehisa Tani^{**}, Toshiro Fujimori^{*}
^{*} *Corporate Research and Development IHI Corporation, Japan*
^{**} *Plant Engineering Operations IHI Corporation, Japan*
"Effects of Catalytic on Gasification of Lignite Coal Using Dual Fluidized Bed Gasifier"
- CCT_Or_9** Wen-De Xiao^{*}, Ai-Juan Lou^{**}
^{*} *Department of Chemical Engineering, Shanghai Jiao Tong Univ., P. R. China*
^{**} *Centron Environmental Technologies, Ltd., P. R. China*
"Ammonia-based FGD process: research progresses and applications in China"

Coffee Break (Chikushi Hall, C-Cube Bldg. 1F)

Duration 11:00 – 11:20

Oral Presentation 3 (parallel session): Clean Coal Technology (CCT)

Location: Room A (Chikushi Hall, C-Cube Bldg. 1F)

Duration 11:20 – 12:40 (20 min. for each presentation)

Session Chair: Dr. Koichi Matsuoka (AIST)

- CCT_Or_10** Shinji Kudo^{***}, Saruul Idesh^{***}, Koyo Norinaga^{****}, Jun-ichiro Hayashi^{****}
^{*} *Research and Education Center of Carbon Resources, Kyushu Univ., Japan*
^{**} *Institute of Materials Chemistry and Engineering, Kyushu Univ., Japan*
^{***} *Interdisciplinary Graduate School of Engineering Science, Kyushu Univ., Japan*
"Pt/Ni/Carbon Catalyst for Catalytic Hydrothermal Reforming of Water-Soluble Organics from the Pyrolysis of Biomass"
- CCT_Or_11** Li-xin Zhang^{*}, Toru Matsuhara^{*}, Shinji Kudo^{**}, Naoto Tsubouchi^{****}, Jun-ichiro Hayashi^{****}, Yasuo Ohtsuka^{****}, Koyo Norinaga^{****}
^{*} *Interdisciplinary Graduate School of Engineering Science, Kyushu Univ., Japan*
^{**} *Research and Education Center of Carbon Resources, Kyushu Univ., Japan*
^{***} *Institute of Materials Chemistry and Engineering, Kyushu Univ., Japan*
^{****} *Center for Advanced Research of Energy and Materials, Hokkaido Univ., Japan*
^{*****} *Cooperative Research Center, Akita Univ., Japan*
"Catalytic steam gasification of low rank coals using inexpensive catalyst resources"
- CCT_Or_12** Hiromi Shirai^{*}, Michitaka Ikeda^{*}, Kenji Tanno^{*}
^{*} *Central Research Institute of Electric Power Industry (CRIEPI), Japan*
"Influence factors on Density and Specific Surface Area (Blaine Value) of Fly Ash from Pulverized Coal Combustion"
- CCT_Or_13** Yuso Oki^{*}, Saburo Hara^{*}, Makoto Kobayashi^{*}, Shiro Kajitani^{*}, Kazuhiro Kidoguchi^{*}, Hiroaki Watanabe^{*}, Hisao Makino^{*}
^{*} *Central Research Institute of Electric Power Industry (CRIEPI), Japan*
"Development of Oxy-Fuel IGCC System"

Lunch (Lunch box provided at C-Cube Bldg. 1F, 3F Lounge Hall, #301, #303 rooms available)

Duration 12:40 – 13:30

Poster Short Presentations (parallel session): Clean Coal Technology (CCT)

Location: Room A (Chikushi Hall, C-Cube Bldg. 1F)

Duration 13:30 – 14:40 (5 min. for each presentation)

Session Chair: Dr. Hiroaki Watanabe (CRIEPI)

- CCT_P_1** Lijun Yu^{*}, Yadong Zhu^{*}, Monan Wang^{*}
^{*} *Institute of Thermal Engineering, Shanghai Jiao Tong Univ., P. R. China*
"Investigation of Organic Rankine Cycle (ORC) system for waste heat recovery"
- CCT_P_2** Du Zhongxuan^{*}, Gu Jianming^{*}, Lin Wensheng^{*}
^{*} *Institute of Refrigeration and Cryogenics, Shanghai Jiao Tong Univ., P. R. China*
"Numerical study on supercritical CH₄/N₂ cooled in horizontal tubes"
- CCT_P_3** Haeyang Pak^{*}, Katsuya Akiyama^{*}, Yoju Takubo^{*}, Toshiya Tada^{*}, Yasuaki Ueki^{**}, Ryo Yoshiie^{***}, Ichiro Naruse^{***}
^{*} *Mechanical Engineering Research Laboratory, Kobe Steel, Ltd., Japan*
^{**} *Energy Science Division, EcoTopia Science Institute, Nagoya Univ., Japan*
^{***} *Department of Mechanical Science & Engineering, Nagoya Univ., Japan*
"Development of combustion technology for low-rank coals in pulverized coal-fired boiler"
- CCT_P_4** Hiroyuki Masaki^{*}, Seiichi Ohyama^{*}, Kazuo Sato^{*}
^{*} *Central Research Institute of Electric Power Industry (CRIEPI), Japan*
"Selenium Measurement in Flue Gas Desulfurization Wastewater by Fully Automated Measuring Equipment"
- CCT_P_5** Takayuki Takarada^{*}, Yuki Yamada^{*}, Kazuyoshi Sato^{*}
^{*} *Department of Chemical & Environmental Engineering, Graduate School of Engineering, Gunma Univ., Japan*
"Steam Gasification Enhancement of Coal Chars by In-situ Alkaline Catalyst Transfer"
- CCT_P_6** Young-Kwang Kim^{*}, Joo-Il Pak^{*}, Jin Miyawaki^{**}, Isao Mochida^{***}, Seong-Ho Yoon^{***}
^{*} *Interdisciplinary Graduated School of Engineering Science, Kyushu Univ., Japan*
^{**} *Institute of Materials Chemistry and Engineering, Kyushu Univ., Japan*
^{***} *Research and Education Center of Carbon Resources, Kyushu Univ., Japan*
"Catalytic Recovery and Re-use of Potassium Carbonate on Supports which Have the Selectivity of Size and Magnetism in Steam Gasification of Lignite"
- CCT_P_7** Sousuke Kubo^{*}, Shinji Kudo^{**}, Koyo Norinaga^{***}, Jun-ichiro Hayashi^{****}
^{*} *Interdisciplinary Graduated School of Engineering Science, Kyushu Univ., Japan*
^{**} *Research and Education Center of Carbon Resources, Kyushu Univ., Japan*
^{***} *Institute of Materials Chemistry and Engineering, Kyushu Univ., Japan*
"Preparation of Iron-coke Composite from Goethite ore and Victorian Brown Coal"

- CCT_P_8** Shuji Yamamoto^{*}, Yasuhiro Sakurai^{*}, Shinji Kudo^{**}, Koyo Norinaga^{***}, Jun-ichiro Hayashi^{***}
^{*} *Interdisciplinary Graduated School of Engineering Science, Kyushu Univ., Japan*
^{**} *Research and Education Center of Carbon Resources, Kyushu Univ., Japan*
^{***} *Institute of Materials Chemistry and Engineering, Kyushu Univ., Japan*
 "Fate of Mono- and Di-aromatics in High-temperature Atmosphere Containing CO, CO₂, H₂ and H₂O"
- CCT_P_9** Tomoyuki Oike^{*}, Tsukasa Sueyasu^{*}, Shinji Kobo^{**}, Koyo Norinaga^{***}, Jun-ichiro Hayashi^{***}
^{*} *Interdisciplinary Graduated School of Engineering Science, Kyushu Univ., Japan*
^{**} *Research and Education Center of Carbon Resources, Kyushu Univ., Japan*
^{***} *Institute of Materials Chemistry and Engineering, Kyushu Univ., Japan*
 "Two-Stage Conversion of Potassium-loaded Biomass into H₂-rich Syngas"
- CCT_P_10** Kazuhiro Kidoguchi^{*}, Saburo Hara^{*}, Yuso Oki^{*}, Shiro Kajitani^{*}, Satoshi Umemoto^{*}, Jun Inumaru^{*}
^{*} *Central Research Institute of Electric Power Industry (CRIEPI), Japan*
 "Development of Oxy-Fuel IGCC System with CO₂ Recirculation for CO₂ Capture - Experimental Examination on Effect of Gasification Reaction Promotion by CO₂ Enriched Using Bench Scale Gasifier Facility -"
- CCT_P_11** Satoshi Umemoto^{*}, Shiro Kajitani^{*}, Saburo Hara^{*}
^{*} *Central Research Institute of Electric Power Industry (CRIEPI), Japan*
 "Soot formation during coal gasification"
- CCT_P_12** Kenji Tanno^{*}, Hiroaki Watanabe^{*}, Satoshi Umemoto^{*}, Hiroki Umetsu^{*}
^{*} *Central Research Institute of Electric Power Industry (CRIEPI), Japan*
 "Numerical Simulation of Coal Gasification in O₂-CO₂ Blown Gasifier"
- CCT_P_13** Hiromichi Takebe^{*}, Hisataka Terai^{*}, Hiroaki Haraga^{*}, Kou Ueda^{*}
^{*} *Ehime University, Japan*
 "Melting Behavior of Coal Gasification Ash"
- CCT_P_14** Xiongchao Lin^{*}, Keiko Ideta^{**}, Jin Miyawaki^{**}, Isao Mochida^{***}, Seong-Ho Yoon^{***}
^{*} *Interdisciplinary Graduated School of Engineering Science, Kyushu Univ., Japan*
^{**} *Institute of Materials Chemistry and Engineering, Kyushu Univ., Japan*
^{***} *Research and Education Center of Carbon Resources, Kyushu Univ., Japan*
 "Effects of Fluxing Agent Addition on Structural transition and Flow Behavior of Coal Ashes"
- CCT_P_15** Yukihide Nagano^{*}, Tomohiro Takeo^{*}, Keiichiro Tomari^{*}, Toshiaki Kitagawa^{*}
^{*} *Department of Mechanical Engineering, Kyushu Univ., Japan*
 "The Combustion Properties of Coal Gasification Gas under Constant Flame Temperature"

CCT_P_16 Hiroaki Watanabe^{*}, Koyo Norinaga^{**}
^{*} *Central Research Institute of Electric Power Industry (CRIEPI), Japan*
^{**} *Institute of Materials Chemistry and Engineering, Kyushu Univ., Japan*
"Large-eddy simulation of a reacting flow of coal gas reforming"

CCT_P_17 Yohsuke Matsushita^{*}, Nozomi Wada^{*}, Sohey Nozawa^{*}
^{*} *Research and Education Center of Carbon Resources, Kyushu Univ., Japan*
"Characteristics of mass transfer of oxidant with partial oxidation reaction in O₂/CO₂ system"

Poster Session: Clean Coal Technology (CCT) & Fuel Cells (FCs)

Location: Room C (Lounge Hall, C-Cube Bldg. 3F)

Duration 14:40 – 15:30

Closing Remarks: Clean Coal Technology (CCT) & Fuel Cells (FCs)

Location: Room A (Chikushi Hall, C-Cube Bldg. 1F)

Duration 15:30-15:45

Session Char: Dr. Hisao Makino (CRIEPI)

Keynote Lectures 2 (parallel session): Fuel Cells (FCs)

Location: Room B (#3 Lecture Room, E Bldg. 1F)

Duration 9:00 – 11:00 (40 min. for each presentation)

Session Chair: Dr. Yoshiyuki Izaki (CRIEPI)

- FC keynote 4** Hee Chun Lim^{*}
** KEPCO Research Institute, Korea Electric Power Cooperation, R. Korea*
"Challenge to New Possibility on Clean Energy Development in KEPCO"
- FC keynote 5** Soshu Kiriwara^{*}, Katsuya Noritake^{*}, Naoki Komori^{*}, Satoko Tasaki^{*}
** JWRI, Osaka Univ., Japan*
"Smart Nanoparticles Assembling to Create Micro Dendrite Structures for Energy Storage and Environmental Analysis Applications"
- FC keynote 6** Vinod M. Janardhanan^{*}
** Indian Institute of Technology Hyderabad, India*
"Multi-scale modeling of solid oxide fuel cells"

Coffee Break (#3 Lecture Room, E Bldg. 1F)

Duration 11:00 – 11:20

Oral Presentations 2 (parallel session): Fuel Cells (FCs)

Location: Room B (#3 Lecture Room, E Bldg. 1F)

Duration 11:20 – 12:40 (20 min. for each presentation)

Session Chair: Dr. Mingruo Hu (SJTU)

- FC_Or_8** Kazumi Tanimoto^{*}, Toshikatsu Kojima^{*}
^{*} *Research Institute for Ubiquitous Energy Devices, National Institute of Advanced Industrial Science and Technology (AIST), Japan*
"The protocols of accelerated test for Polymer Electrolyte Fuel Cell"
- FC_Or_9** Minoru Umeda^{*}, Mitsuhiro Inoue^{*}
^{*} *Department of Material Science and Technology, Faculty of Engineering, Nagaoka Univ. of Technology, Japan*
"Highly Durable Polymer Electrolyte Fuel Cell: Study of H₂O₂-Induced Pt Electrode Dissolution"
- FC_Or_10** Shigenori Mitsuhima^{*}, Yoshio Fujita^{*}, Koichi Matsuzawa^{*}, Akimitsu Ishihara^{*}, Ken-ichiro Ota^{*}
^{*} *Chemical Energy Laboratory, Yokohama National Univ., Japan*
"Catalytic activity degradation of Ta-CNO electrocatalyst for oxygen reduction reaction"
- FC_Or_11** Katsuhiko Yamaji^{*}, Mina Nishi^{*}, Taro Shimonosono^{*}, Fangfang Wang^{*}, Do-Hyung Cho^{*}, haruo Kishimoto^{*}, Manuel E. Brito^{*}, Teruhisa Horita^{*}, Harumi Yokokawa^{*}
^{*} *Energy Technology Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Japan*
"Recent Progress on study of durability and reliability of SOFCs at AIST"

Lunch (Lunch box provided at C-Cube Bldg. 1F, 3F Lounge Hall, #301, #303 rooms available)

Duration 12:40 – 13:30

Poster Short Presentations (parallel session): Fuel Cells (FCs)

Location: Room A (#3 Lecture Room, E Bldg. 1F)

Duration 13:30 – 14:30 (5 min. for each presentation)

Session Chair: Dr. Hiroshi Morita (CRIEPI)

- FC_P_1** Byung-Jun Kim*, Wei Li*, Donghui Long**, Jin Miyawaki*, Seong-Ho Yoon*, Isao Mochida*
* *Institute of Materials Chemistry and Engineering, Kyushu Univ., Japan*
** *State Key Laboratory of Chemistry Engineering, East China Univ. of Science and Technology, P. R. China*
"Development of Pt catalyst for PEMFC using structure controlled CNF as a catalyst support"
- FC_P_2** Fengjing Jiang*, Wolfgang H. Meyer**
* *Institute of Fuel Cell, School of Mechanical Engineering, Shanghai Jiao Tong Univ., P. R. China*
** *Max Plank Institute of Polymer Research, Germany*
"Effects of Acid-base Interaction on Proton-Conducting Membranes with Phosphonic Acid as Protogenic Groups"
- FC_P_3** Kazuto Ohba*, Atsushi Nomura*, Satoshi Fukada*, Masabumi Nishikawa*
* *Department of Advanced Energy Engineering Science, Kyushu Univ., Japan*
"Study on relation between moisture in solid polymer type fuel cell and battery output"
- FC_P_4** Yang Li*, Fuqiang Li*, Hengyong Tu*, Yiwu Weng*
* *School of Mechanical Engineering, Key Laboratory for Power Machinery and Engineering of Ministry of Education, Shanghai Jiao Tong Univ., P. R. China*
"Performance study and Control strategies for pressurized solid fuel cell-micro turbine hybrid system"
- FC_P_5** Heng-Yong Tu*, Kun Luo*, Xian-Zhu Fu**, Jing-Li Luo**, Qing-Chun Yu*, Quan-Min Yang***
* *Institute of Fuel Cell, School of Mechanical Engineering, Shanghai Jiao Tong Univ., P. R. China*
** *Department of Chemical and Materials Engineering, Univ. of Alberta, Canada*
*** *Vale-Inco Ltd., Canada*
"Impregnated Composite Anodes for Solid Oxide Fuel Cells Fed by H₂S-containing Syngas"
- FC_P_6** Hiroshi Morita*, Makoto Kawase*, Yoshihiro Mugikura*
* *Central Research Institute of Electric Power Industry (CRIEPI), Japan*
"Long-term operation and post-test analysis of bench-scale MCFCs"
- FC_P_7** Koichi Asano*, Yoshihiro Mugikura*
* *Central Research Institute of Electric Power Industry (CRIEPI), Japan*
"Solid oxide fuel cell using proton-conducting oxide thin film fabricated by UV-MOD"

FC_P_8

Jong-Pil Kim^{*}, Young-June Chang^{*}, Si-Hyun Lee^{**}, Chung-Hwan Jeon^{*}

^{*} *School of Mechanical Engineering, Pusan National Univ., R. Korea*

^{**} *Climate Change Technology Research Division, Korea Institute of Energy Research (KIER), R. Korea*

"Experimental study of DCFC system with ash-free coal as fuel"

Poster Session: Clean Coal Technology (CCT) & Fuel Cells (FCs)

Location: Room C (Lounge Hall, C-Cube Bldg. 3F)

Duration 14:40 – 15:30

Closing Remarks: Clean Coal Technology (CCT) & Fuel Cells (FCs)

Location: Room A (Chikushi Hall, C-Cube Bldg. 1F)

Duration 15:30-15:45

Session Char: Dr. Hisao Makino (CRIEPI)

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| Third Day : November 10th |
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Post Conference Tour

Location: EAGLE gasification test facility, Wakamatsu Research Institute, J-POWER

Duration 9:00-13:30

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|---------------|--|
| 9:00 | Departure at Hakata Station |
| 10:30 – 12:00 | Visiting Wakamatsu Research Institute (EAGLE facility) |
| 12:00 – 13:30 | Return trip to Hakata Station (Lunch will be provided in a bus.) |
| Optional: | |
| 13:30 – 17:00 | Dazaifu Tenmangu Sightseeing Tour |