

Session Program for Process Engineering

Date: 18th March, 2014

Place: Room 408/409, Ryoshin-kan, Imadegawa Campus, Doshisha University

【Schedule Overview】

8:30 – 11:30 Parallel Session

11:30 – 12:30 Poster Session

12:30 Depart from Imadegawa Campus to RITE

14:30 – 16:30 RITE Visit

16:30 Depart from RITE

【Program & Contents】

8:30 – 11:30 **Parallel Session I : High Performance Energy Technology**

Place: Room 408 Ryoshin-kan, Imadegawa Campus

Chair: Prof. Hiroshi Yamaguchi, Doshisha Univ.

Prof. Arne Bredesen, NTNU

8:30 – 8:50 “*CO₂ Refrigeration Systems for Chilling of Computer and Telephone Units*”
Trygve M Eikevik, NTNU

8:50 – 9:10 “*Energy Efficiency of Hydrogen Liquefaction in Large Scale*”
Petter Neksa^{a,b}, David Berstad^a and Harald Taxt Walnum^a,
^aSINTEF Energy Research , ^bNTNU

9:10 – 9:30 “*Design, Construction and Test of a Prototype for Hydrogen Production from Biogas with Integrated CO₂-capture*”
Julien Meyer, IFE

9:30 – 9:50 “*Bulk and Nanomaterials for Energy Development and Storage*”
B. Jeyadevan and Hiroshi Miyamura, Shiga Prefecture University

9:50 – 10:10 Break

Chair: Prof. Petter Nekså, SINTEF Energy Research and NTNU
Prof. Yuhiro Iwamoto, Doshisha University

- 10:10 – 10:30 “*Magnetic Nanofluids for Heat Exchanger Concepts (NanoHX)*”
Halvor Lund^a, Eskil Aursand^a, Åsmund Ervik^{a,b}, Magnus Aashammer Gjennestad^a and Karl Yngve Lervåg^a,
^aSINTEF Energy Research, ^bNTNU
- 10:30 – 10:50 “*Total Emission Control for Multi Fuel Boiler System with Plasma-Chemical Aftertreatment*”
H. Fujishima^a, Y. Fukumoto^a, T. Kuroki^a, A. Tanaka^b, K. Otsuka^b and M. Okubo^a,
^aOsaka Prefecture University, ^bTakao Iron Works Co.
- 10:50 – 11:10 “*Analysis of the Trilateral Flash Cycle for Power Production from Low Temperature Heat Sources*”
Stian Traedal^a, Trygve M. Eikevik^a, Daniel Rohde^b and Brede Hagen^b
^aNTNU, ^bSINTEF Energy Research
- 11:10 – 11:30 “*CFD Analysis of R744 Ejectors*”
Olav Martin Haddal^a, Trygve Magne Eikevik^a, Krzysztof Banasiak^b and Armin Hafner^b,
^aNTNU, ^bSINTEF Energy Research

8:30 – 11:30 Parallel Session II: Membranes for Sustainable Energy Technology

Place: Room 409 Ryoshin-kan, Imadegawa Campus

Chair: Prof. Teruhiko Kai, RITE

- 8:30 – 8:50 “*Zeolite Membranes for Liquid Separations*”
Izumi Kumakiri, Kazuhiro Tanaka and Hidetoshi Kita, Yamaguchi Univ.
- 8:50 – 9:10 “*Membrane Contactor for Post Combustion CO₂ Capture: Modeling of a Hollow Fiber Module*”
Muhammad Saeed and Liyuan Deng, NTNU
- 9:10 – 9:30 “*Zeolite Membrane for Practical Dehydration of Organic Solvents*”
Masakazu Kondo, MZM
- 9:30 – 9:50 “*Membranes-A Promising Solution for CO₂ Capture from Cement Industry*”
M-B Hägg^a, Vahid Sarfarez^a, Xuezhong He^a, M. Sandru^b and T-J. Kim^b,
^aNTNU, ^bSINTEF MC

9:50 – 10:10 Break

Chair: Prof. Izumi Kumakiri, Yamaguchi Univ.

10:10 – 10:30 *“Carbon Membranes”*
Hidetoshi Kita, Yamaguchi Univ.

10:30 – 10:50 *“Mixed Ion Transport in Dual-Phase Membranes for CO₂ Separation”*
Evans^a, W. Xing^b, M.-L. Fontaine^b, T. Peters^b, R. Bredesen^b and T. Norby^a,
^aUiO, ^bSINTEF Materials and Chemistry

10:50 – 11:10 *“Flexible Pd-alloy Composite Membrane and Module Fabrication for Studies on Hydrogen Separation”*
Rune Bredesen, Thijs A. Peters, Marit Stange and Ole Martin Løvvik, SINTEF Materials and Chemistry

11:10 – 11:30 *“Membrane technology for hydrogen society”*
Teruhiko Kai, RITE

11:30 – 12:30 Poster Session

Place: B1 Gallery, Kambaikan, Muromachi Campus

PE-P1 *“Effect of Water Spray on Adsorbed Toluene Decomposition by Nonthermal Plasma Flow”*
Masanari Tanaka, Tomoyuki Kuroki and Masaaki Okubo, Osaka Prefecture University

PE-P2 *“Boiling Heat Transfer Characteristics of Binary Magnetic Fluid under Non-uniform Magnetic Field”*
Haruhiko Yamasaki, Yuhiro Iwamoto and Hiroshi Yamaguchi, Doshisha University

PE-P3 *“The Concept of using a Forward Osmotic Membrane to Control Water Break-Through in an Oil/Gas Reservoir”*
Qiang Yu, and May-Britt Hägg, NTNU

PE-P4 *“Hydration of Oxides”*
Andreas Løken, Ragnhild Hancke, Truls Norby, Reidar Haugsrud, UiO

PE-P5 *“Proton Ceramic Fuel Cells”*
Nahum Masó, Olav Thorsen, Peter Engeset, Truls Norby, UiO

- PE-P6 *“Research on Dense Ceramic Gas Separation Membranes at UiO”*
Zuoan Li, Camilla K. Vigen, Sarmad W. Saeed, Anna Evans, Ragnhild Hancke, Einar Vøllestad, Reidar Haugrud and Truls Norby, Centre for Materials Science and Nanotechnology, and UiO
- PE-P7 *“Thermoelectric Oxide Materials”*
Matthias Schrade and Truls Norby, Centre for Materials Science and Nanotechnology, and UiO
- PE-P8 *“Characterisation of Electrical Properties of Oxide Materials”*
Truls Norby, UiO
- PE-P9 *“Preparation of Carbon Membranes from Biogas Tar”*
Shunsuke Goto, Yamato Emoto, Tomoko Koga, Izumi Kumakiri, Kazuhiro Tanaka and Hidetoshi Kita, Yamaguchi University
- PE-P10 *“Application of Zeolite Membranes to Transesterification of Alcohol/Acrylate Mixture”*
Kouji Hashimoto, Izumi Kumakiri, Kazuhiro Tanaka and Hidetoshi Kita, Yamaguchi University
- PE-P11 *“Sodalite (SOD) Membrane Preparation by Secondary Growth Method”*
Lingfang Qiu, Izumi Kumakiri, Kazuhiro Tanaka and Hidetoshi Kita, Yamaguchi University
- PE-P12 *“Permeation Properties of Cellulose Acetate Membranes with Acetylated Cyclodextrin”*
Tomoya Masuda^a, Izumi Kumakiri^a, Kazuhiro Tanaka^a, Hidetoshi Kita^a, Yuma Yamamoto^b and Hirohito Yamasaki^b,^aYamaguchi University,^bUbe National Collage of Technology
- PE-P13 *“Synthesis and Permeation Properties of High Al Containing ZSM-5 Zeolite Membranes”*
Takuya Yamamoto, Izumi Kumakiri, Kazuhiro Tanaka and Hidetoshi Kita, Yamaguchi University
- PE-P14 *“Preparation of Acid-Stable MFI Zeolite Membranes”*
Yuta Yamashita, Izumi Kumakiri, Kazuhiro Tanaka and Hidetoshi Kita, Yamaguchi University
- PE-P15 *“Investigation of Ultra-low Temperature Refrigeration System using CO₂ as a Working Fluid”*
Sho Ozaki, Haruhiko Yamasaki, Yuhiro Iwamoto and Hiroshi Yamaguchi, Doshisha University