

Poster Presentation: [Odd Numbers] 12:10-13:20, 29 Oct. (Day 3)
[Even Numbers] 13:20-14:30, 29 Oct. (Day 3)

- P-01** **Development of Module for Calcium Chloride-water Heat Storage and Its Performance**
Noriyuki KOBAYASHI, Natsuki CHIHARA, Kanato OMURA
Department of chemical systems engineering, Nagoya University
- P-02** **Evaluation of Electricity Storage Technologies Including Carnot Battery Using a Global Energy Systems Model**
Teruhisa ANDO, Fuminori SANO, Keigo AKIMOTO
Systems Analysis Group, Research Institute of Innovative Technology for the Earth (RITE)
- P-03** **Numerical analysis of a calcium oxide/water thermochemical energy storage reactor with multi reaction tubes**
Kanta SATO¹, Satoshi TOSHIMA¹, Tsuyoshi IZAKI², Hana SAEKI¹, Kenta TOMITA², Takashi KATO³, Shigehiko FUNAYAMA³, Hiroki TAKASU³, Yukitaka KATO³
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²*Nuclear Engineering, Department of Transdisciplinary Science and Engineering, Institute of Science Tokyo,*
³*Laboratory for Zero-Carbon Energy, Institute of Integrated Research, Institute of Science Tokyo*
- P-04** **Evaluation of Output Performance and Reaction Rate Limiting for Microbial Fuel Cells**
Hiroya KOMBA¹, Kosei NAITO², Minoru DOHI¹, Tomohiro TOJO²
¹*Department of Electrical and Electronic Engineering, Graduate School of Science and Technology, Shizuoka Institute of Science and Technology,*
²*Department of Electrical and Electronic Information Engineering, Graduate School of Engineering, Toyohashi University of Technology*
- P-05** **Sustainable biodiesel production from byproduct oil derived from worm cultivation using food waste**
Calvin Tanito HARRINGTON, Kousuke HIROMORI, Atsushi TAKAHASHI, Naomi SHIBASAKI-KITAKAWA
Department of Chemical Engineering, Graduate School of Engineering, Tohoku University, Japan
- P-06** **Bio-diesel production with heterogenous CaO catalyst using minimal ultrasonic irradiation**
Toru TORII¹, Yuji AOYAMA¹, Rika SHINOHARA², Yusuke KOMAZAKI³, Fumiyuki KOBAYASHI¹, Sachiko ODAKE¹, Kiyomi FUCHIGAMI⁴
¹*School of Food Science and Technology, Nippon Veterinary and Life Science University,*
²*GSFS, University of Tokyo,*
³*AIST,*
⁴*Shofu Inc.*
- P-07** **Determination of Al₂O₃ and (Mg, Mn)Al₂O₄ co-saturated liquidus line of Al₂O₃-MgO-MnO-SiO₂ system for steelmaking**
Ryuya HABU¹, Motoya IWABUCHI¹, Hiroshi FUKAYA^{1,2}, Shigeru SUZUKI², Takahiro MIKI¹
¹*Graduate school of Engineering, Tohoku University,*
²*Material Technology Laboratory, The Japan Steel Works, Ltd.*
- P-08** **MOFs composites coatings for atmospheric water harvesting**
Roberto DI PIETRO¹, Vincenza BRANCATO², Andrea FRAZZICA², Elpida PIPEROPOULOS¹
¹*Department of Engineering, University of Messina,*
²*CNR ITAE*

P-09 **Formation of adsorbent layer on surface-modified aluminum plate and its water vapor adsorption properties**

Kenta OCHIMIZU¹, Yuma YAMAUCHI¹, Takuya TSUJIGUCHI², Akio KODAMA², Mikio KUMITA²

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P-10 **Long term interface reaction between structural material and molten metal in large scale latent heat storage system**

Shun OINUMA, Reki TAKAKU, Shoko SUYAMA, Chikako IWAKI

Material Engineering R&D Department, Energy Systems R&D Center, Toshiba Energy Systems & Solutions Corporation

P-11 **Performance of Nickel Chloride Composite for Chemical Heat Storage Using Ammonia over Repeated Sorption/Desorption Cycles**

Ryo SUZUKI¹, Shigehiko FUNAYAMA², Yukitaka KATO², Hiroki TAKASU²

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P-12 **Development of a Novel Solid-Gas Chemical Thermal Storage System for Utilization of Low-Temperature Waste Heat - Experimental Investigation of Thermal Discharge Characteristics-**

Seito KOJIMA, Koichi NAKASO, Kuniaki GOTO

Graduate School of Environmental, Life, Natural Science and Technology, Okayama University

P-13 **Study on supercooling relaxation of sugar alcohols**

Hayato SUZUMURA, Masaya SUGAWARA, Manabu TOKUSHIGE, Junichi RYU

Graduate School of Engineering, Chiba University

P-14 **Development of Thermo-Chemical Energy Storage Materials Using Redox Reaction of Cobalt Oxide**

Shunya OKAMURA, Manabu TOKUSHIGE, Junichi RYU

Graduate School of Engineering, Chiba University

P-15 **Performance Evaluation of Heat Storage System Using SiC Honeycomb Heat Exchanger**

Daisuke AMIKURA

Graduate School of Engineering, University of Fukui

P-16 **Thermal storage stability of K₂CO₃ composites assisted by EG/OP-10 additives for low-temperature applications**

Asriadi SAKKA^{1,2}, Seo Been KO^{1,3}, Duckjae WEI¹, Seongeun KIM¹, Soo Hyun CHOI¹, Jihoo YOO¹, Woo Seok JEONG¹, Sung Kook HONG¹, Chan Young PARK¹

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P-17 **Reducing Leakage Current in Protonic Ceramic Fuel Cells Using Pyrochlore Bilayer Electrolyte**

Sarach TANGKASEMJIT, Julián A. ORTIZ-CORRALES, Junichiro OTOMO

Institute of Science Tokyo

P-18 **Formic acid production behavior by CO₂ electrolysis using electrodeposited electrode**

Zexu WU¹, Kakeru FUJIWARA², Yugo OSAKA³, Akio KODAMA², Takuya TSUJIGUCHI³

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P-19 **Influence of Porous Structures on Gas-Liquid Transport Behavior within Water Electrolysis Cells**

Shinnosuke OMOTO, Takeru YANO, Shusaku ASANO, Gen INOUE

Department of Chemical Engineering, Faculty of Engineering, Kyushu University

P-20 **Development of phosphorus-doped silicon nanoparticle anode for high performance lithium-ion batteries**

Hidetaka NOMURA, Keisuke SATO

Department of Electrical and Electronic Engineering, Tokyo Denki University

P-21 **Effect of inorganic impurities on the performance of direct formic acid fuel cell**

Kuan CHENG¹, Kakeru FUJIWARA², Yugo OSAKA³, Akio KODAMA², Takuya TSUJIGUCHI³

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P-22 **Quaternized Polystyrene-Based Anion Exchange Membrane: Synthesis and Electrochemical Performance**

Gulfeza KARDAS¹, Leyla BASAT¹, Murat FARSAK²

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²Osmaniye Korkut Ata University

P-23 **Kalman Filtering Approach to Estimate State of Charge in Lithium-Ion Polymer Batteries through Initial Modeling by Pulse Power Characterization**

Shu HAMADA, Kanta WATANABE, Hirofumi TAKIKAWA, Tomohiro TOJO

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P-24 **Zeolite-encapsulated Ni particulate catalysts with high hydrothermal stability for the steam reforming reaction of biomass pyrolysis oil**

Mana TAKANO¹, Tsuki YOKOSAWA¹, Ryo NAGURA¹, Liling HUANG¹, Hiroyasu FUJITSUKA², Kentaro KIMURA¹, Teruoki TAGO¹

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P-25 **Comparative Energy Requirement Analysis of CO₂ Capture Using Different Amine Absorbents**

Chairunnisa CHAIRUNNISA, Takahiko MIYAZAKI

Faculty of Engineering Sciences, Kyushu University

P-26 Development of MFI zeolite-encapsulated metal nanoparticulate catalysts by dry-gel conversion method for its application for naphtha cracking reaction

Misaki ENDO¹, Koki FUKUSHIMA¹, Nodoka NAKATANI¹, Kentaro KIMURA¹,
Hiroyasu FUJITSUKA², Teruoki TAGO¹

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P-27 Mineral characterization and establishment of quantification method for CO₂ fixation in ERW

Kota SUGIURA¹, Tsutomu SATO², Shinya IWASAKI³, Takao NAKAGAKI¹

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P-28 Low-grade heat driven CO₂ recovery TSA using adsorbent-loaded heat exchanger

Koutarou ENMOTO¹, Kakeru FUJIWARA², Yugo OSAKA³, Takuya TSUJIGUCHI³, Akio KODAMA²

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P-29 Experimental Study on Biogas Separation by Internally Heated and Cooled Temperature Swing Adsorption

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P-30 MFI zeolite-encapsulated Pt catalyst for ethane conversion to valuable hydrocarbons

Raichi ASAMI, Ken-ichi YOSIDA, Hidekazu GOTO, Kentaro KIMURA, Teruoki TAGO

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P-31 Design and Evaluation of Layered MnO₂ anode with Intercalated Metal Complexes for Hydrogen Evolution

Ryo SASAKI, Kazuaki TOMONO

Department of Materials and Life Science, Graduate School of Engineering, Kanto Gakuin University, Japan

P-32 Development of Metal-Supported Solid Oxide Electrolysis Cells for active carbon recycling energy system

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P-33 **Effects of cell layer difference on performance of metal-supported solid oxide electrolysis cell for carbon dioxide reduction in carbon recycling ironmaking system**

Yoshino IKEDA¹, Rikuya MIYAZAKI², Daisuke MORITOMO², Hiroki TAKASU³, Yukitaka KATO³

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P-34 **Dry reforming of methane using core-shell catalysts prepared by flame spray pyrolysis**

Isaki OGATA¹, Kakeru FUJIWARA², Koichi HIGASHIMINE³, Yuga OSAKA⁴, Takuya TSUJIGUCHI⁴, Akio KODAMA²

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P-35 **Size-controlled hydrothermal synthesis of high-entropy oxide nanoparticles as oxygen evolution electrocatalysts**

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P-36 **CO₂ mineralization of seawater-derived MgO using pressurized ball mill**

Ryunosuke ITAHANA, Shoei OISHI, Takao NAKAGAKI

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P-37 **Modulating the Electrochemical CO₂ Reduction Reaction Performance by Loading CoTPP onto High-Surface-Area Activated Carbon**

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P-38 **CO₂ methanation by microwave irradiation using spiral-shaped Ru/CeO₂ catalyst bed**

Masaki KOBAYASHI¹, Taishi NANBU¹, Choji FUKUHARA²

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P-39 **Suppressing Coke Formation via Fe Incorporation in Ni@Silicalite-1 Catalyst for Dry Reforming of Methane**

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P-40 **Evaluation of a Carbon Capture Process Based on a Blended Aqueous Solution of Ammonia and Methyldiethanolamine through Simulation**

Hyerin KIM, Jin-Young KIM, Jae-Bum LEE, Kwon-Woo LEE, Min-Kyeong OH, Seong-Yun BAE, Sang-Jun HAN, Jong-Ho MOON

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P-41 **Development and thermodynamic analysis of DEEA/PZ blended amine absorbents for CO₂ capture**

Jinyoung KIM, Hyerin KIM, Jaebeom LEE, Kwonwoo LEE, Shaukat Ali MAZARI, Minkyong OH, Seongyun BAE, Jongho MOON

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P-42 **Effects of Electrolyte Concentration on the Performance of Layered MnO₂ Capacitors**

Ryota SUGAWARA¹, Ryosuke OKAWA², Ryo SASAKI², Masami MATSUI², Kazuaki TOMONO²

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P-43 **Composite materials with high thermal conductivity for calcium oxide/water thermochemical energy storage**

Satoshi TOSHIMA¹, Saeki HANA¹, Tsuyoshi IZAKI², Takashi KATO³, Shigejiko FUNAYAMA³, Hiroki TAKASU³, Yukitaka KATO³

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P-44 **Binary Fe-Co Sites on Biomass-Derived Carbon for Bifunctional ORR/OER in Metal-Air Batteries**

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P-45 **Catalytic Combustion-Based Energy-Saving insert for Radiant Tube**

Yi-Hsing LIN, Chung-Wei FU, Yu-Lun LAI

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P-46 **A new experimental protocol for the heat storage performance assessment of plant waxes, based on the evolution of micro- and nano- scale surface features during crystallization**

G. Claudiu SAVULESCU, Maja RUCKER

Eindhoven University of Technology

P-47 **Study on Morphology Formation of Granules by Spray Drying Method**

Shogo YANAGIHARA

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- P-48** **Development of Palladium-Copper Alloy Membrane with Porous Nickel Support Introduced by Electroplating for High-Purity Hydrogen Separation**
So NIWA¹, Yoshinari HOZUMI², Ryu HAMAMURA², Hiroki TAKASU³, Shigehiko FUNAYAMA³, Yukitaka KATO³

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- P-49** **Elucidation of water partition behavior for continuous esterification process design**

Tomoyasu KUBO, Kousuke HIROMORI, Atsushi TAKAHASHI, Naomi SHIBASAKI-KITAKAWA
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- P-50** **Development of optical measurement methods of temperature and nanoparticle concentration distributions to investigate diffusions in nanofluid**
Ryo SAIGUSA, Keita AIZAWA, Hiroki KUSUDO, Tetsushi BIWA, Eita SHOJI

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- P-51** **Evaluation of interfacial thermal resistance between surface-modified metal oxide and polymer using molecular dynamics simulation**
Takamasa SAITO¹, Takao TSUKADA², Eita SHOJI³, Gota KIKUGAWA⁴, Donatas SURBLYS⁴, Momoji KUBO³, Masaki KUBO¹

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- P-52** **Sorption of Ionic Organic Dyes by Layered MnO₂ with Interlayer Lipid Ions**
Masami MATSUI, Yume KUROKAMI, Takumi SATO, Kazuaki TOMONO

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- P-53** **Ammonia adsorption and desorption behavior of MOFs(Metal-Organic Frameworks)**

Ryosuke OMAE, Ryota FUJISAWA, Manabu TOKUSHIGE, Junichi RYU

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- P-54** **Bubble formation during pool boiling of water in a narrow vertical channel under subatmospheric pressure conditions**

Dominika KACZMAREK¹, Amin ALTAMIRANO², Marie-Christine DULUC², Bartosz ZAJACKOWSKI¹, Brice TREMEAC²

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- P-55** **Investigation of the Separation Performance of CMS for Binary Gas Systems in the Kinetic-Separation TSA Process**

Taiki SAKAMOTO¹, Yugo OSAKA², Kakeru FUJIWARA³, Takuya TSUJIGUCHI², Akio KODAMA³

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- P-56 Numerical study of Nano-Biofilm Stagnation Flow from a Nonlinear Stretching/Shrinking Surface with Variable Nanofluid and Bioconvection Transport Properties**
Abdulaziz S ALSENAFI¹, O.Anwar BEG², Mohammad FERDOWS³, Tasveer A BEG⁴, A KADIR²
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²Department of Mechanical Engineering, Salford University, Manchester, UK,
³Department of Applied Mathematics, University of Dhaka, Bangladesh,
⁴Renewable Energy and Computational Multi-Physics, Israfil House, UK
- P-57 Evaluation of interfacial affinity between organic molecule-modified films and various solvents using molecular simulations**
Yusuke TAKAOKA¹, Gota KIKUGAWA²
¹Graduate School of Engineering, Tohoku University, ²Institute of Fluid Science, Tohoku University
- P-58 Accuracy improvement of Thermophysical Property Estimation for CO₂ Mineralization of steelmaking slag Using DNN**
Manami ITO, Takao NAKAGAKI
Division of Modern Mechanical Engineering, School of Creative Science and Engineering, Waseda University
- P-59 Evaluation of nanofluids for heat recovery in a shell-and-tube heat exchanger: a net energy perspective**
Keitaro TSUCHIYAMA, Kazuki FUKUSHIMA, Koki YAGIHARA, Hajime OHNO, Yasuhiro FUKUSHIMA
Department of Frontier Sciences for Advanced Environment, Tohoku University
- P-60 Nitriding-induced Degradation of Stainless Steels in Ammonia-fueled Gas Turbine System**
Doowon JEONG, Hwasung YEOM
Division of Advanced Nuclear Engineering, Pohang University of Science and Technology (POSTECH)
- P-61 Optimization and Development of Dual-Stage Separation System for Ammonia Decomposition: TSA-Based NH₃ Removal and PSA-Driven H₂/N₂ Purification**
Gwonwoo LEE, Jaebum LEE, Hyerin KIM, Jinyoung KIM, Shaukat Ali MAZARI, Minseo YUN, Eunuk YU, Ankit BELBASE, Jongho MOON
Chungbuk National University
- P-62 Monitoring of Flow Rate, Viscosity, and Density in Microchannel by AI-based Fluid Soft Sensor**
Kosuke NIHEI, Yuya MURAKAMI
Department of Applied Chemistry and Biochemical Engineering, Faculty of Engineering, Shizuoka University
- P-63 Kinetic Investigation of Dushman Reaction in CSTR using Hybrid Neural Network**
Seiken HAYASHI, Yuya MURAKAMI
Department of Applied Chemistry and Biochemical Engineering, Faculty of Engineering, Shizuoka University
- P-64 Comparing Sodium-Ion and Lithium-Ion Batteries: Safety and Sustainability**
Elpida PIPEROPOULOS, Maria Francesca MILAZZO
Department of Engineering, University of Messina
- P-65 Life cycle CO₂ and cost on installation of snow cooling in supermarket**
Takeshi HIGUCHI, Kensho YAMAZAKI, Rintaro ITO, Nozomi TAKEDA
Department of Applied Chemistry, Chemical Engineering, and Biochemical Engineering, Yamagata University

P-66 **Safety management in a power plant conversion using hydrogen/methane blending**

Filippo FAZIO, Elpida PIPEROPOULOS, Maria Francesca MILAZZO

Department of Engineering, University of Messina

P-67 **Techno-Economic and Life Cycle Assessment of Alternative Fuel-Based Decarbonization Pathways for Sustainable Cement Production**

JaeBeom LEE, Jae-Hoon JEON, Hye-Rin KIM, Jin-Young KIM, Kwon-Woo LEE, Eun-Uk YU, Min-Seo YUN, Ankit BELBASE, Sang-Jun HAN, Jong-Ho MOON

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