

---

JOURNAL OF CHEMICAL ENGINEERING OF JAPAN 掲載論文, Vol.54, No.5 (2021)

---

[Special Issue on the 5th International Symposium on Innovative Materials and Processes in Energy Systems (IMPRES2019)]

Preface to the special issue (IMPRES2019) .....185  
Yukitaka Kato

Thermal Conductivity for Polymer Composite Materials: Recent Advances in Polyimide Materials (Journal Review) .....186  
Masashi Haruki

Additive Effect on Lithium Silicate Pellets for Thermochemical Energy Storage .....195  
Hiroki Takasu, Takuya Nihei, Seon Tae Kim and Yukitaka Kato

Heat Release Behavior during Hydration Reaction of  $\beta$ -Lanthanum Sulfate/Thermally Expanded Graphite Composite for Use as Chemical Heat Storage Material .....201  
Masashi Haruki and Masayuki Fujita

Identifying Parameters from Discharging and Relaxation Curves of Lithium-Ion Batteries Using Porous Electrode Theory .....207  
Gen Inoue, Hiroki Mashioka, Naoki Kimura and Yoshifumi Tsuge

Effect of Heat-Treatment Temperature of Carbon Gels on Cathode Performance of Lithium-Air Batteries .....213  
Shinichiroh Iwamura, Kazuki Fujita, Shintaroh Nagaishi, Kazuki Sakai and Shin R. Mukai

Activity Enhancement of a Carbon Electrode Material for Vanadium Redox Flow Battery by Electron-Beam Irradiation .....219  
Hirokazu Ishitobi, Shunya Yamamoto, Takafumi Ishii, Kosuke Oba, Honoka Doki, Ryusuke Obata, Atsumi Miyashita, Hiroyuki Okazaki and Nobuyoshi Nakagawa

Numerical Analysis of Silica Coating Effect on Pt Cathode Catalyst in Polymer Electrolyte Fuel Cells .....226  
Kayoung Park, Magnus So, Masaki Goto, Sakae Takenaka, Yoshifumi Tsuge and Gen Inoue

Performance of Direct Formate Fuel Cell Using Non-Precious Metal Cathode Catalyst .....232  
Fahimah Abd Lah Halim, Takuya Tsujiguchi, Yugo Osaka and Akio Kodama

Carbon Nanofiber Aerogel Fabricated by Supercritical Drying and Application in Li-O<sub>2</sub>/CO<sub>2</sub> Battery .....239  
Shofiyah Sakinah, Nattanai Kunanusont and Yusuke Shimoyama

CO<sub>2</sub> Capture from a Simulated Dry Exhaust Gas by Internally Heated and Cooled Temperature Swing Adsorption .....248  
Soichiro Masuda, Yugo Osaka, Takuya Tsujiguchi and Akio Kodama

Integrated Evaluation of POME Treatment by Dielectric Barrier Discharge Based on Yield of H<sub>2</sub> and CH<sub>4</sub>, EEM and Removal of COD .....255  
Reni Desmiarti, Maulana Yusup Rosadi, Primas Emeraldi and Ariadi Hazmi

Development of Hydrogen Permselective Membranes for Propylene Production .....260  
Katsunori Ishii, Yuhei Nagataki, Junko Yoshiura, Yuta Saito, Takaya Nagataki and Mikihiro Nomura

Crystallinity of Carbon Nanoparticles Generated by Laser Ablation in Supercritical Carbon Dioxide .....266  
Hidenori Higashi, Kazuki Maejima, Toru Yoshikawa, Mikio Kumita, Takafumi Seto and Yoshio Otani

---