

The Korean Journal of Chemical Engineering

June 2014
Volume 31, Number 6

Korean J. Chem. Eng. 31(6) 919-1094
Print ISSN 0256-1115
Online ISSN 1975-7220

REVIEW PAPER

- Zhanzhong Wang, Wenzhi Fang, Yan Li, Jingshu Zhang, and Qing Gu 919 **A new strategy for protein crystallization : Effect of ionic liquids on lysozyme crystallization and morphology**
- Safaa Abdelraouf Ahmed, Heba Ahmed Hani, Ghada Ahmed Al Bazed, Mayyada M. H. El-Sayed, and Abdelghani M. G. Abulnour 924 **Small/medium nuclear reactors for potential desalination applications : Mini review**

PROCESS SYSTEMS ENGINEERING, PROCESS SAFETY

- Bei Wang, Qingchao Jiang, and Xuefeng Yan 930 **Fault detection and identification using a Kullback-Leibler divergence based multi-block principal component analysis and bayesian inference**
- Young Han Kim 944 **Sequential simulation of packed distillation columns using rate-based model**

TRANSPORT PHENOMENA

- Hyuckjin Kwon, Mingshou Lu, and Jinwon Lee 949 **Optimization of hollow fiber membrane cleaning process for microalgae harvest**
- Baoqing Deng, Daqiang Ge, Li Lu, Di Ge, Jiajia Li, Yuan Guo, and Chang Nyung Kim 956 **Use of P-1 model with the additional source term for numerical simulation of ultra-violet radiation in a photoreactor**

CATALYSIS, REACTION ENGINEERING

- Jung Hun Kwak, Gui Young Han, Jong Wook Bae, and Ki June Yoon 961 **Tungsten oxides supported on nano-size zirconia for cyclic production of syngas and hydrogen by redox operations**
- Dong-Woo Kim, Min-Ji Kim, Kuruppathparambil Roshith, Moon-Il Kim, Joo-Young Kwak, and Dae-Won Park 972 **Comparative catalytic activity of supported ZnBr₂-containing ionic liquid catalysts for preparation of glycerol carbonate by glycerolysis of urea**

ENERGY

- Eun Mi Jo, Dong Hyuk Chun, In Su Park, Sang Do Kim, Young Joon Rhim, Hokyung Choi, Jiho Yoo, Jeong Hwan Lim, and Sihyun Lee 981 **Characteristics of coal upgraded with heavy oils**
- Farhad Salimi, Mohsen Vafaie Sefti, Khosrow Jarrahan, Majid Rafipoor, and Seyyed Saeed Ghorashi 986 **Preparation and investigation of the physical and chemical properties of clay-based polyacrylamide/Cr (III) hydrogels as a water shut-off agent in oil reservoirs**

ENVIRONMENTAL ENGINEERING

- Suk Young Chun, Sang Woo An, Si Jin Lee, Ji Tae Kim, and Soon Woong Chang 994 **Optimization of sulfamethoxazole degradation by TiO₂/hydroxyapatite composite under ultraviolet irradiation using response surface methodology**
- Huan Dong, Yue Zhang, and Zhongzhu Gu 1002 **Effects of diluents on NO_x formation in coflow CH₄/air diffusion flames**

- Lacramioara Rusu, Maria Harja, Andrei Ionuț Simion, Daniela Suteu, Gabriela Ciobanu, and Lidia Favier 1008 **Removal of Astrazone Blue from aqueous solutions onto brown peat. Equilibrium and kinetics studies**
- Ali Akbar Amooey, Shahram Ghasemi, Seyed Mohammad Mirsoleimani-azizi, Zohreh Gholaminezhad, and Mohammad Javad Chaichi 1016 **Removal of Diazinon from aqueous solution by electrocoagulation process using aluminum electrodes**
- Gabriela Ciobanu, Maria Harja, Lacramioara Rusu, Anca Mihaela Mocanu, and Constantin Luca 1021 **Acid Black 172 dye adsorption from aqueous solution by hydroxyapatite as low-cost adsorbent**

BIOTECHNOLOGY

- Ebadullah Asadi, Saman Azodi-Deilami, Majid Abdouss, Davood Kordestani, Alireza Rahimi, and Somayeh Asadi 1028 **Synthesis, recognition and evaluation of molecularly imprinted polymer nanoparticle using miniemulsion polymerization for controlled release and analysis of risperidone in human plasma samples**
- Bongsoo Lee, Gang-Guk Choi, Yoon-E. Choi, Minji Sung, Min S. Park, and Ji-Won Yang 1036 **Enhancement of lipid productivity by ethyl methane sulfonate-mediated random mutagenesis and proteomic analysis in *Chlamydomonas reinhardtii***

SEPARATION TECHNOLOGY, THERMODYNAMICS

- Anissa Acidi, Muhammad Hasib-ur-Rahman, Faiçal Larachi, and Azzedine Abbaci 1043 **Ionic liquids [EMIM][BF₄], [EMIM][Otf] and [BMIM][Otf] as corrosion inhibitors for CO₂ capture applications**
- Fan Zhang, Wei Sun, Junteng Liu, Weidong Zhang, and Zhongqi Ren 1049 **Extraction separation of toluene/cyclohexane with hollow fiber supported ionic liquid membrane**
- Palsamy Kanagaraj, Sivasubramaniyan Neelakandan, and Alagumalai Nagendran 1057 **Preparation, characterization and performance of cellulose acetate ultrafiltration membranes modified by charged surface modifying macromolecule**
- Xudong Yu, Qinghong Yin, Dongbo Jiang, and Ying Zeng 1065 **Metastable equilibrium for the quaternary system containing with lithium+potassium+magnesium+chloride in aqueous solution at 323 K**

MATERIALS (Organic, Inorganic, Electronic, Thin Films)

- Xiaofeng Li, Zhigang Huang, Tongchi Xia, Huichao Dong, and Yanghua Song 1070 **Electrochemical properties of Bi-Ni and Bi-Ni-Mn composite-coated electrolytic manganese dioxide**

POLYMER, INDUSTRIAL CHEMISTRY, FLUIDIZATION, PARTICLE TECHNOLOGY

- Suphapan Satchawan, Wimol Naksata, Chairaj Rattanakawin, Sakdiphon Thiansem, Preecha Panya, Ponlayuth Sooksamiti, Peter J. Scales, and Orn-anong Arqueropanyo 1076 **Effect of sodium dodecylbenzene sulfonate on the dispersion stability of ceramic glaze suspension**
- Bencheng Wu, Xiaohui Li, Jianhua Zhu, Yanzhao Huang, and Hui Cheng 1082 **Identification of acidic species extracted from heavy crude oil by fourier transform ion cyclotron resonance mass spectrometry**
- Mohammad Tariqul Islam, Yuvaraj Haldorai, Van Hoa Nguyen, Muhammad Naoshad Islam, Choon Sup Ra, and Jae-Jin Shim 1088 **Controlled radical polymerization of vinyl acetate in supercritical CO₂ catalyzed by CuBr/terpyridine**