

The Korean Journal of Chemical Engineering

April 2014
Volume 31, Number 4

Korean J. Chem. Eng. 31(4) 541-724
Print ISSN 0256-1115
Online ISSN 1975-7220

INVITED REVIEW PAPER

- Jin Young Park 541 Lithographically patterned micro-/nanostructures via colloidal lithography

REVIEW PAPER

- Mansour Ghaffari-Moghaddam, 548 Green synthesis of silver nanoparticles using plant extracts
Robabeh Hadi-Dabanlou,
Mostafa Khajeh,
Mansoureh Rakhshanipour,
and Kamyar Shameli

PROCESS SYSTEMS ENGINEERING, PROCESS SAFETY

- Zhiyou Chen, Yanlong Hou, 558 Simultaneous optimization of water and heat exchange networks
Xiaoduan Li, and Jingtao Wang

TRANSPORT PHENOMENA

- Inkollu Sreedhar, Gautam Jain, 568 Polymer induced turbulent drag reduction using pressure and gravity-driven meth-
ods
Patibandla Srinivas,
and Kuppireddy Suresh Kumar Reddy
Sumit Kumar Jana, Asit Baran Biswas, 574 Gas holdup in tapered bubble column using pseudoplastic non-Newtonian liquids
and Sudip Kumar Das

CATALYSIS, REACTION ENGINEERING

- Van-Khoa Nguyen, Jung-Hyun Park, 582 Characterization and activity of V₂O₅/CeO₂-MgO catalyst in the dehydrogenation
and Chae-Ho Shin
of ethylbenzene to styrene
Boonya Thongrom, 587 Photocatalytic degradation of dye by Ag/ZnO prepared by reduction of Tollen's
Pongsaton Amornpitoksuk,
Sumetha Suwanboon,
and Jonas Baltrusaitis
Hongyan Zhu, Minghao Zhou, 593 Selective hydrogenation of furfural to cyclopentanone over Cu-Ni-Al hydrotalcite-
Zuo Zeng, Guomin Xiao, and Rui Xiao
based catalysts

ENERGY

- Golamreza Molaeimanesh 598 Water droplet dynamic behavior during removal from a proton exchange mem-
brane fuel cell gas diffusion layer by Lattice-Boltzmann method
and Mohammad Hadi Akbari

ENVIRONMENTAL ENGINEERING

- Hyosoo Kim, Yejin Kim, Minsoo Kim, 611 Performance evaluation of a full-scale advanced phase isolation ditch process by
Wenhuia Piao, Jeasung Gee, using real-time control strategies
and Changwon Kim
Si-Kyung Cho, Mo-Kwon Lee, 619 Enhanced anaerobic digestion of livestock waste by ultrasonication: A tool for ammo-
Dong-Hoon Kim, Yeo-Myeong Yun,
Kyung-Won Jung, Hang-Sik Shin,
and Sae-Eun Oh
Junghyun Bae, Nayoung Park, 624 Characteristics of pellet-type adsorbents prepared from water treatment sludge
Goun Kim, Choul Ho Lee,
Young-Kwon Park, and Jong-Ki Jeon
and their effect on trimethylamine removal

- Amirhosein Ramazanpour Esfahani,
Saeid Hojati, Amin Azimi,
Leila Alidokht, Alireza Khataee,
and Meysam Farzadian
Kaliyan Vallalperuman,
Mathivanan Parthibavarman,
Sekar Sathishkumar, Manickam Durairaj,
and Kuppusamy Thavamani
Muhammad Fiayyaz,
Khalid Mahmood Zia,
Mohammad Zuber, Tahir Jamil,
Muhammad Kaleem Khosa,
and Muhammad Asghar Jamal
- 630 **Reductive removal of hexavalent chromium from aqueous solution using sepiolite-stabilized zero-valent iron nanoparticles: Process optimization and kinetic studies**
- 639 **Synthesis and characterization of Co and Mn doped NiO nanoparticles**
- 644 **Synthesis and characterization of polyurethane/bentonite nanoclay based nano-composites using toluene diisocyanate**

BIOTECHNOLOGY

- Agus Saptoro,
Morgan Ting Hock Herng,
and Emily Liew Wan Teng
Mohanam Anand,
Vaithialingam Selvaraj,
and Muthukaruppan Alagar
Eun Ju Lee and Kwang-Hee Lim
- 650 **Oxygen transfer to cassava starch solutions in an aerated, well-mixed bioreactor: Experimental and mass transfer studies**
- 659 **Synthesis, characterization and evaluation of antioxidant and anticancer activities of novel benzisoxazole-substituted-allyl derivatives**
- 664 **Polyelectrolyte complexes of chitosan self-assembled with fucoidan: An optimum condition to prepare their nanoparticles and their characteristics**

SEPARATION TECHNOLOGY, THERMODYNAMICS

- Reza Tabaraki
and Shahrbanoo Rastgoo
Sergio Carvalho de Santana,
Raimundo Cosme da Silva Filho,
Jorge dos Santos Cavalcanti,
Jackson Araujo de Oliveira,
Gorete Ribeiro de Macedo,
Francine Ferreira Padilha,
and Everaldo Silvino dos Santos
Mohammad Kavand, Tahereh Kaghzchi,
and Mansooreh Soleimani
Go-Eun Cha, Ho-Jin Sung,
Jun-Heok Lim, Tae-Yoon Lee,
and Jea-Keun Lee
Ho-Sung Yoon, Chul-Joo Kim,
Kyeong Woo Chung, Su-Jeong Lee,
A-Ram Joe, Yang-Ho Shin, Se-il Lee,
Seung-Joon Yoo, and Jin-Geol Kim
- 676 **Comparison between conventional and ultrasound-assisted extractions of natural antioxidants from walnut green husk**
- 684 **Modeling and simulation of breakthrough curves during purification of two chitosanases from *Metarrhizium anisopliae* using ion-exchange with expanded bed adsorption chromatography**
- 692 **Optimization of parameters for competitive adsorption of heavy metal ions (Pb^{+2} , Ni^{+2} , Cd^{+2}) onto activated carbon**
- 701 **CO₂ absorption characteristics of a jet loop reactor with a two-fluid swirl nozzle in an alkaline solution**
- 706 **Leaching kinetics of neodymium in sulfuric acid from E-scrap of NdFeB permanent magnet**

MATERIALS (Organic, Inorganic, Electronic, Thin Films)

- Heming Luo, Liwen Zheng,
Longyan Lei, Deyi Zhang,
Jingxiang Wu, and Jian Yang
- 712 **Supercapacitive behavior of mesoporous carbon CMK-3 in calcium nitrate aqueous electrolyte**

POLYMER, INDUSTRIAL CHEMISTRY, FLUIDIZATION, PARTICLE TECHNOLOGY

- Zhengyu Zhang, Ailing Yuan,
Haibo Wang, Ling Zhu, Hong Xu,
and Chunling Zheng
- 719 **Effects of solvent properties on cationic dyeing process of acrylic yarn**