

The Korean Journal of Chemical Engineering

April 2016
Volume 33, Number 4

Korean J. Chem. Eng. 33(4) 1125-1504
Print ISSN 0256-1115
Online ISSN 1975-7220

INVITED REVIEW PAPER

- Byung Hoon Jo, Chang Sup Kim, 1125 Recent developments and applications of bioinspired silicification
Yun Kee Jo, Hogyun Cheong,
and Hyung Joon Cha

PROCESS SYSTEMS ENGINEERING, PROCESS SAFETY

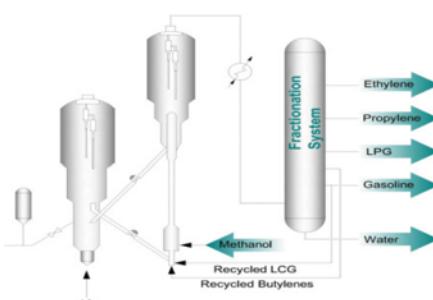
- Amirhossein Khalili-Garakani, 1134 Matrix based method for synthesis of main intensified and integrated distillation
Javad Ivakpour, and Norollah Kasiri sequences
- Kee-Youn Yoo, Jun-Soo Park, 1153 Modeling and analysis of circulation variables of continuous sorbent loop cycling
and Myung-June Park for CO₂ capture

TRANSPORT PHENOMENA

- Hoon Chae Park, Hang Seok Choi, 1159 Heat transfer of bio-oil in a direct contact heat exchanger during condensation
and Ji Eun Lee
- Zheng Gong, An Zhao, Lu-Sheng Zhai, 1170 Ultrasonic method for measuring the gas holdup of gas-liquid bubbly flow in a
Ying-Yu Ren, and Ning-De Jin small-diameter pipe
- Gomadurai Chinnasamy, 1181 Development and performance analysis of a novel agitated vessel
Saravanan Kaliannan, Abraham Eldho,
and Deepa Nadarajan

CATALYSIS, REACTION ENGINEERING

- Jietae Lee and Dong Hyun Kim 1186 An improved linear formula for cyclic adsorption, diffusion and reaction in a catalyst
- Behrang Izadkhah, Aligholi Niaezi, 1192 Catalytic removal of CO and NOx using sol-gel synthesized LaB_{0.5}Co_{0.5}O₃ (B=Cr,
Daryush Salari, Shahriar Hosseinpoor,
Seyed Ali Hosseini,
and Ali Tarjomannejad Mn and Cu) and LaMn_xCo_{1-x}O₃ nano-perovskites
- Pengyong Hoo 1200 Monolaurin yield optimization in selective esterification of glycerol with lauric acid
and Ahmad Zuhairi Abdullah over post impregnated HPW/SBA-15 catalyst
- Gholam Reza Molaeimanesh 1211 A pore-scale model for microfibrous ammonia cracking microreactors via lattice
and Mohammad Hosein Sanati Davarani Boltzmann method
- Mohamad Hajar 1220 Production of a biodiesel additive in a stirred basket reactor using immobilized
and Farzaneh Vahabzadeh lipase: Kinetic and mass transfer analysis
- Lei Hu, Zhen Wu, Jiaxing Xu, 1232 Efficient hydrolysis of cellulose over a magnetic lignin-derived solid acid catalyst
Shouyong Zhou, and Guodong Tang in 1-butyl-3-methylimidazolium chloride
- Xiaojing Meng, Huiwen Huang, 1239 Efficient production of propylene and gasoline from methanol in multi-regime riser
Qiang Zhang, Chunyi Li, and Qiukai Cui



ENERGY

- Abhishek Kumar Singh and Mausumi Mukhopadhyay 1247 **Lipase-catalyzed glycerolysis of olive oil in organic solvent medium: Optimization using response surface methodology**
- Heidy Visbal, Kohji Nagashima, and Kazuyuki Hirao 1255 **Surface analysis of three aluminum foils and relation to hydrogen generation capability**
- Soichi Hirota, Shuhei Inoue, Takahito Inoue, Yoshifumi Kawai, Yasutaka Wada, Takashi Noguchi, and Yukihiko Matsumura 1261 **Inhibition of char deposition using a particle bed in heating section of supercritical water gasification**

ENVIRONMENTAL ENGINEERING

- Won-Seok Yang, Ji Eun Lee, Yong-Chil Seo, Jang-Soo Lee, Heung-Min Yoo, Jun-Kyung Park, Se-Won Park, Hang Seok Choi, Ki-Bae Lee, and Woo-Hyun Kim 1267 **Utilization of automobile shredder residue (ASR) as a reducing agent for the recovery of black copper**
- Sareh Naeem, Ahad Ghaemi, and Shahrokh Shahhosseini 1278 **Experimental investigation of CO₂ capture using sodium hydroxide particles in a fluidized bed**
- Javad Alaei Kadijani, Elhameh Narimani, and Hessameddin Alaei Kadijani 1286 **Using response surface methodology to optimize ultrasound-assisted oxidative desulfurization**
- Seyed Ali Jafari and Abbas Jamali 1296 **Continuous cadmium removal from aqueous solutions by seaweed in a packed-bed column under consecutive sorption-desorption cycles**
- Gi Bo Han, Jung Hee Jang, Changsik Choi, and Tae Jin Lee 1305 **Effect of efficient supply of pure O₂ concentrated by PSA-type O₂ separator on improvement of indoor air quality**
- Gi Bo Han, Jung Hee Jang, Tae Jin Lee, and Changsik Choi 1311 **Performance test of PSA-type O₂ separator for efficient O₂ supply to room ventilation system combined with CO₂ adsorption module**

BIOTECHNOLOGY

- Satya Eswari J. and Neha Chandrakar 1318 **Artificial neural networks as classification and diagnostic tools for lymph node-negative breast cancers**
- Mihaela Violeta Ghica, Mădălina Georgiana Albu, Durmuş Alpaslan Kaya, Lăcrămioara Popa, Şevket Öztürk, Laura-Cristina Rusu, Cristina Dinu-Pîrvu, Ciprian Chelaru, Luminița Albu, Aurelia Meghea, and Cornelia Nitipir 1325 **The effect of lavandula essential oils on release of niflumic acid from collagen hydrolysates**
- Young Hoon Song, Chang Sup Kim, and Jeong Hyun Seo 1331 **Noninvasive monitoring of environmental toxicity through green fluorescent protein expressing *Escherichia coli***
- Wanjun Li, Qiong Jia, Zhenyu Zhang, and Yuanpeng Wang 1337 **Preparation of γ -alumina nanoparticle modified polyacrylamide composite and study on its solid phase extraction of Sunset Yellow**
- Juyoung Shin, Songlee Han, and Seong-Pil Kang 1345 **Investigation of xenon and natural gas hydrate as a storage medium to maintain the enzymatic activity of the model proteins**

SEPARATION TECHNOLOGY, THERMODYNAMICS

- Ali Akbar Babaei, Alireza Khataee, Elham Ahmadpour, Mohsen Sheydae, Babak Kakavandi, and Zahra Alaee 1352 **Optimization of cationic dye adsorption on activated spent tea: Equilibrium, kinetics, thermodynamic and artificial neural network modeling**
- Hwa-Jou Wei, Tsung-Yen Tsai, and Yu-Hsiang Weng 1362 **Pilot-scale study on dehydration of synthetic and lignocellulosic ethanol by NaA membrane**
- Yinan Yan, Yajun Gao, Wenjing Tang, Qiang Li, and Jianbin Zhang 1369 **Characterization of high-alumina coal fly ash based silicate material and its adsorption performance to CO₂**
- Farhad Heidary, Ali Reza Khodabakhshi, and Ali Nemati Kharat 1380 **Novel ion-exchange nanocomposite membrane containing in-situ formed FeOOH nanoparticles: Synthesis, characterization and transport properties**

Ehsan Javadi Shokroo, Danial Jafari Farsani, Hadiseh Khalilpour Meymandi, and Nadia Yadollahi	1391	Comparative study of zeolite 5A and zeolite 13X in air separation by pressure swing adsorption
Milad Asgarpour Khansary	1402	Vapor pressure and Flory-Huggins interaction parameters in binary polymeric solutions
Ali Ghanadzadeh Gilani, Hossein Ghanadzadeh Gilani, Seyedeh Laleh Seyed Saadat, Elham Nasiri-Touli, and Mahrokhs Peer	1408	Liquid-liquid equilibrium data in aqueous solutions of propionic and butyric acids with 1-heptanol at $T=(298.15, 308.15, \text{ and } 318.15)$ K
Yuan Fan, Rui Feng Yang, Zhi Min Lei, Na Liu, Jiali Lang Lv, Shangru Zhai, Bin Zhai, and Lei Wang	1416	Removal of Cr(VI) from aqueous solution by rice husk derived magnetic sorbents
Dongyoung Lee, Yohan Lee, Wonjung Choi, Seungmin Lee, and Yongwon Seo	1425	Accurate measurement of phase equilibria and dissociation enthalpies of HFC-134a hydrates in the presence of NaCl for potential application in desalination

MATERIALS (Organic, Inorganic, Electronic, Thin Films)

Eluvathingal Devassy Sherly, John Judith Vijaya, Lourdu Samy John Kennedy, Arunachalam Meenakshisundaram, and Melcureraj Lavanya	1431	A comparative study of the effects of CuO, NiO, ZrO₂ and CeO₂ coupling on the photocatalytic activity and characteristics of ZnO
Byungsun Bang and Taewhan Yeu	1441	Characterization of lithium tetrafluoroborate and N-methylacetamide complex as electric and ionic conductors
Younghwan Im, Sora Kang, Byeong Sub Kwak, Kyoung Soo Park, Tae Woo Cho, Jin-Sik Lee, and Misook Kang	1447	Electrochemical performance of three shaped ZnO nanoparticles prepared in LiOH, NaOH and KOH alkaline solutions as anodic materials for Ni/Zn redox batteries
Amina Gharbi, Hafed El Feki, and Hassane Oudadesse	1456	Novel alkali borosilicate glasses: Preparation, structural investigation and thermal study

POLYMER, INDUSTRIAL CHEMISTRY

Ehsan Bagheripour, Abdolreza Moghadassi, and Sayed Mohsen Hosseini	1462	Preparation of mixed matrix PES-based nanofiltration membrane filled with PANI-co-MWCNT composite nanoparticles
Shengbin He, He Fang, and Xiaoping Xu	1472	Filtering absorption and visual detection of methylene blue by nitrated cellulose acetate membrane
Gurumurthy Hegde, Yuvaraj Aralapura Rajkumar, Gan Siew Mei, Syed Mahmood, Uttam Kumar Mandal, and Achalkumar Ammathnadu Sudhakar	1480	Photoisomerization behavior of photochromic amide-based azobenzene dyes exhibiting H-bonding effect: Synthesis and characterization

FLUIDIZATION, PARTICLE TECHNOLOGY

Dakshinamoorthy Prasanna and Vaithilingam Selvaraj	1489	Pt and Pt-Sn nanoparticles decorated conductive polymer-biomass ash composite for direct methanol fuel cell
Nulu Venugopal, Woo-Sik Kim, and Taekyung Yu	1500	A facile synthetic route for Co₃O₄ nanoparticle/porous carbon composite as an efficient anode material for lithium-ion batteries