

# Korean Chemical Engineering Research

December 2014  
Volume 52, Number 6

Korean Chem. Eng. Res., 52(6) 695-852(2014)  
PISSN 0304-128X, EISSN 2233-9558

## Article

### Industrial Chemistry(Electrochemistry, Analytical Chemistry) · Drug Delivery System · Functional Coating Technology · Biomedical Materials

- Degradation of Electrode and Membrane in Proton Exchange Membrane Fuel Cell After Water Electrolysis  
..... Jae-Hyeun Jeong, Eun-Kyung Shin, Jae-Jin Jeong, Il-Chai Na, Cheun-Ho Chu and Kwon-Pil Park 695
- Cudrania tricuspidata* Root Extract as Whitening and Antiwrinkle Cosmetic Agent  
..... Hyejin Shin, Hyangli Jeong, Danbi Hwang and Donguk Kim 701

### Process System Engineering · Plant Design · Process Safety · Plant Engineering

- Maximum Pressure and the Blast Wave Analysis of a Amount of HMX  
..... Hweeung Kwon, Kyongjae Tak, Junghwan Kim, Min Oh, Jooseung Chae, Hyeonsoo Kim and Il Moon 706
- Visualization of Stage Calculations in Quaternary Reactive Distillation with Multiple Reactions  
..... Dohyung Kang and Jae W. Lee 713
- A Comparative Study of Various Fuel for Newly Optimized Onboard Fuel Processor System under the Simple Heat Exchanger Network  
..... Ikhwan Jung, Chansaem Park, Seongho Park, Jonggeol Na and Chonghun Han 720
- Modeling, Simulation and Optimization of Hydrogen Production Process from Glycerol using Steam Reforming  
..... Jeongpil Park, Sunghyun Cho, Seunghwan Lee, Dong Ju Moon, Tae-Ok Kim and Dongil Shin 727
- Development of Hazardous Work Mapping Methodology Based on Layout of Workplace Handling The Accident Preparedness Substances  
..... Jin Hyung Kim, Jae Mo Yang, Jong-Won Yong, Byung Seok Ko, Byungtae Yoo and Jae Wook Ko 736
- A Method to Develop for Emergency Response Guidelines using Business Continuity Plan in Chemical Plant  
..... Jae Mo Yang, Ji Woo Seol, Jong-Won Yong, Sang Wook Ko, Chulhwan Park, Byungtae Yoo and Jae Wook Ko 743
- Quantitative Risk Analysis of a Pervaporation Process for Concentrating Hydrogen Peroxide  
..... Ho Jin Jung, Ik Keun Yoon and Soo Hyoung Choi 750
- Hazard Assessment on Chlorine Distribution Use of Chemical Transportation Risk Index  
..... Jeong Gon Kim and Hun Soo Byun 755

### Separation Technology · Thermodynamics · Membrane Technology · Supercritical Fluid Extraction · Ionic Liquids

- Crystal Sinking Modeling for Designing Iodine Crystallizer in Thermochemical Sulfur-Iodine Hydrogen Production Process  
..... Byung Heung Park, Seong-Uk Jeong and Jeong Won Kang 768
- Micellar Enhanced Ultrafiltration (MEUF) and Activated Carbon Fiber (ACF) Hybrid Processes for the Removal of Cadmium from an Aqueous Solution  
..... Rahman Faizur Rafique and Seunghwan Lee 775
- Adsorption of Co(II), Ni(II), Pb(II) and U(VI) from Aqueous Solutions using Polyaniline/Graphene Oxide Composites  
..... Zhengjie Liu, Jianwei Yang, Changzhen Li, Jiaying Li, Yajuan Jiang, Yunhui Dong and Yueyun Li 781
- Effects of Main Constituents of W/O Emulsion on Removal of Acetic Acid in a Simulated Hemicellulosic Hydrolysate  
..... Sung Jin Lim and Sang Cheol Lee 789

### Energy/Environment · New Renewable Energy · Waste Treatment/Energy Recovery Technology

- Basic Economic Analysis for Co-production Process of DME and Electricity using Syngas Obtained by Coal Gasification  
..... Young Don Yoo, Su Hyun Kim, Wonjun Cho, Yonggi Mo and Taekyong Song 796
- Production of Silver Impregnated Bamboo Activated Carbon and Reactivity with NO Gases  
..... Young-Cheol Bak, Joo-Hong Choi and Geun-Lim Lee 807
- Evaluation of Hydrate Inhibition Performance of Water-soluble Polymers using Torque Measurement and Differential Scanning Calorimeter  
..... Kyuchul Shin, Juwoon Park, Jakyung Kim, Hyunho Kim, Yohan Lee, Yongwon Seo and Yutaek Seo 814
- Steam Gasification Kinetics of Sawdust Char at High Temperature  
..... Seon Ah Roh, Jin Han Yun, Sang In Keel, Tai Jin Min and Jung Kyu Lee 821

### Catalysis/Reaction Engineering · Reactor Development/Modeling · Numerical Analysis · Transport Phenomena

- Computational Fluid Dynamics Study of Channel Geometric Effect for Fischer-Tropsch Microchannel Reactor  
..... Jonggeol Na, Ikhwan Jung, Krishnadas S. Kshetrimayum, Seongho Park, Chansaem Park and Chonghun Han 825

## Short Communication

- Optimization of Medium for Carotenoids Production by *Arthrobacter* sp. PAMC 25486 Using Response Surface Methodology  
..... Hyun-do Kim, Jong-il Choi and Se Jong Han 834