

# Korean Chemical Engineering Research

August 2014  
Volume 52, Number 4

Korean Chem. Eng. Res., 52(4) 407-552(2014)  
PISSN 0304-128X, EISSN 2233-9558

## Review

- Research Trend of Lactulose Production from Lactose  
..... Ja Hyun Lee, Hah Young Yoo, Da Un Jung, Chamho Park, Yoon Seok Song, Chulhwan Park and Seung Wook Kim 407
- Technology Trend on the Increase of Biogas Production and Sludge Reduction in Wastewater Treatment Plants:  
Sludge Pre-treatment Techniques  
..... Il Hyoung Cho, In Beom Ko and Ji Tae Kim 413

## Article

- Industrial Chemistry(Electrochemistry, Analytical Chemistry) · Drug Delivery System · Functional Coating Technology · Biomedical Materials**
- Measurement of Hydrogen Crossover by Gas Chromatograph in PEMFC  
..... Jaejin Jeong, Jaehyeun Jeong, Saehoon Kim, Byungki Ahn, Jaijoon Ko and Kwonpil Park 425
- Effect of SAA Pretreatment on SSF at Low Temperature to Bioethanol Production from Rice Straw  
..... Suh Yoon Jang and Jun Seok Kim 430
- Studies on Optical-fiber Sensor to Monitor Temperature using Reversible Thermochromic Gel Type Cobalt (II)  
Chloride/Polyvinyl Butyral  
..... KiSeob Hwang, JeaHee Park, KiRyong Ha and JunYoung Lee 436
- Selective Catalytic Reduction of NO by H<sub>2</sub> over Pt-MnO<sub>x</sub>/ZrO<sub>2</sub>-SiO<sub>2</sub> Catalyst  
..... Juyoung Kim, Kwang Ha and Gon Seo 443
- Effect of Types of Acrylic Monomers on Properties of Anti-static Waterborne Acrylic Polyurethane Dispersion  
..... Woo Young Huh, Dong Gu Yun and Ki Chang Song 451
- Process System Engineering · Plant Design · Process Safety · Plant Engineering**
- A Simulation Study of Inter Heat Exchanger Process in SI Cycle Process for Hydrogen Production  
Jae Sun Shin, Sung Jin Cho, Suk Hoon Choi, Faraz Qasim, Heung N. Lee, Jae Ho, Park, Won Jae Lee, Euy Soo Lee and Sang Jin Park 459
- Optimization of Single-stage Mixed Refrigerant LNG Process Considering Inherent Explosion Risks  
..... Ik Hyun Kim, Seungkyu Dan, Seonghyun Cho, Gibaek Lee and En Sup Yoon 467
- Study of Multi Floor Plant Layout Optimization Based on Particle Swarm Optimization  
..... Pyung Jae Park and Chang Jun Lee 475
- Separation Technology · Thermodynamics · Membrane Technology · Supercritical Fluid Extraction · Ionic Liquids**
- Extraction of Caffeic Acid and Rosmarinic Acid from *Zostera marina* Based on Ionic Liquids and Deep Eutectic Solvent  
..... Yu Ri Lee, Yu Jin Lee and Kyung Ho Row 481
- Adsorption Behavior and Kinetic Characteristic of Cibacron Brilliant Red 3B-A by Granular Activated Carbon  
..... Jong Jib Lee 486
- Biochemical Engineering · Biochip Technology · Biomedical Technology**
- Production of Chemical Intermediate Furfural from Renewable Biomass Miscanthus Straw  
..... Gwi-Taek Jeong 492
- Optimization of Adsorbent Treatment Process for the Purification of Paclitaxel from Plant Cell Cultures of *Taxus chinensis*  
..... Chung-Gi Lee and Jin-Hyun Kim 497
- Energy/Environment · New Renewable Energy · Waste Treatment/Energy Recovery Technology**
- Evaluation of Environmental and Economic Impacts of Advanced Wastewater Treatment Plants with Life Cycle Assessment  
..... SeHee Pyo, MinJeong Kim, SeungChul Lee and ChangKyoo Yoo 503
- Fluidization Engineering · Climate Change Technology · Fuel Conversion Technology**
- Heat Transfer in Bubble Columns with High Viscous and Low Surface Tension Media  
..... Wan Tae Kim, Dae Ho Lim and Yong Kang 516
- Comparison of Solid Circulation Characteristics with Change of Lower Loop Seal Geometry in a Circulating Fluidized Bed  
..... Dong-Ho Lee, Sung-Ho Jo, Gyoung-Tae Jin, Chang-Keun Yi, Ho-Jung Ryu and Seung Bin Park 522
- Materials(Inorganics/Organics, Electronics, Semiconductor) · Nano Technology · Semiconductor Technology · Microreactor**
- Preparation and Properties of Moisture-absorbing Film Impregnated with Polyacrylic Acid Partial Sodium Salt Material  
..... Youn Suk Lee, Hong Yeol Choi and Insik Park 530
- Surface Properties of Glutathione Layer Formed on Gold Surfaces Interacting with ZrO<sub>2</sub>  
..... Jin-Won Park 538
- Catalysis/Reaction Engineering · Reactor Development/Modeling · Numerical Analysis · Transport Phenomena**
- Kinetic Study on Char-CO<sub>2</sub> Catalytic Gasification of an Indonesian lignite  
..... Do Kyun Lee, Sang Kyum Kim, Soon Choel Hwang, Si Hoon Lee and Young Woo Rhee 544