

The Korean Journal of Chemical Engineering

May 2005
Volume 22, Number 3

Korean J. Chem. Eng. 22(3) 339-494
ISSN 0256-1115

PROCESS SYSTEMS ENGINEERING, PROCESS SAFETY, TRANSPORT PHENOMENA

- Yeong-Koo Yeo, Jong Ho Park, 339 **Model Algorithmic Control of Grade Change Operations in Paper Mills**
See-Han Park and Changman Sohn
- Sang Il Han, Sung Gun Lee, 345 **A Gene Clustering Method with Masking Cross-matching Fragments Using Mod-
ified Suffix Tree Clustering Method**
Bo Kyeng Hou, Sunghoon Park,
Young Han Kim and Kyu Suk Hwang

CATALYSIS REACTION ENGINEERING, INDUSTRIAL CHEMISTRY

- Hasan Akhtar Zaidi 353 **Transformation of Methanol to Gasoline Range Hydrocarbons Using HZSM-5
and Kamal Kishore Pant Catalysts Impregnated with Copper Oxide**
- Marappan Sathish 358 **Electrochemical Degradation of Aqueous Phenols Using Graphite Electrode in a
and Ram Prasad Viswanath Divided Electrolytic Cell**
- Seok-Jun Yoa, Yong-Soo Cho 364 **Photocatalytic Degradation of Toluene with Ozone Addition
and Jun-Ho Kim**
- Jun Ho Kim, Byung Ho Noh, 370 **Hydrothermal Synthesis of Titanium Dioxide Using Acidic Peptizing Agents and
Gun-Dae Lee and Seong-Soo Hong Their Photocatalytic Activity**
- Gun Dae Lee, Cha Soo Suh, 375 **Raney Ni Catalysts Derived from Different Alloy Precursors
Jin Hwan Park, Seong Soo Park (I) Morphology and Characterization
and Seong Soo Hong**
- Il-Kyu Kim, Hyun-Jung Ha, 382 **Degradation of Chlorophenol by Photocatalysts with Various Transition Metals
Sang-Keun Lee and Jea-Keun Lee**
- Ukrit Sahapatsombud, 387 **Simulation Studies on Reactive Distillation for Synthesis of *tert*-Amyl Ethyl Ether
Amornchai Arpornwichanop,
Suttichai Assabumrungrat,
Piyasan Prasertthadam and Shigeo Goto**

ENERGY AND ENVIRONMENTAL ENGINEERING

- Siriwan Silapakul, 393 **Nitrogen Compounds Removal in a Packed Bed External Loop Airlift Bioreactor
Sorawit Powtongsook
and Prasert Pavasant**
- Kil-Yoon Kang, Dong-Hyun Ahn, 399 **Extraction of Lipids and Cholesterol from Squid Oil with Supercritical Carbon
Gordon T. Wilkinson Dioxide
and Byung-Soo Chun**
- Songki Lee, Daejin Kim, 406 **Comparative Studies of a Single Cell and a Stack of Direct Methanol Fuel Cells
Jaeyoung Lee, Sung Taik Chung
and Heung Yong Ha**

BIOTECHNOLOGY

- Kwinam Park, Honghyun Kim, 412 **Characteristics of the Lipase from *Candida rugosa* Modified with Copolymers of
Sanjeev Maken, Yeounsoo Kim, Polyoxyethylene Derivative and Maleic Acid Anhydride
Byoungryul Min and Jinwon Park**
- Mi So Park, Ju Hee Han, 418 **Degradation of Styrene by a New Isolate *Pseudomonas putida* SN1
Seung Shick Yoo, Eun Yeol Lee,
Sun Gu Lee and Sunghoon Park**
- Bong-Jae Park, Chong-Ho Lee 425 **Development of Novel Protein Refolding Using Simulated Moving Bed Chroma-
and Yoon-Mo Koo tography**

SEPARATION TECHNOLOGY, THERMODYNAMICS

- Sung-Sam Yim and Yun-Min Song 433 **Study on the Mechanism of Hindered Sedimentation by 'Unified Theory on Solid-
Liquid Separation'**
- Sasmita Pradhan 441 **Simulation and Analysis of Extractive Distillation Process in a Valve Tray Column
and Aravamudan Kannan Using the Rate Based Model**

- Yong Jung Kwon and Won Gyu Lee 452 **Prediction of the Infinite-dilution Partial Molar Volumes of Organic Solutes in Supercritical Carbon Dioxide Using the Kirkwood-Buff Fluctuation Integral with the Hard Sphere Expansion (HSE) Theory**
- Byeong Il Noh, Gang Choon Lee and Tae Kyung Yoon 457 **The Effects of Amine Additives and Flow Rate on the Performance of Mixed-bed Ion Exchange at Ultralow Concentrations**
- Du Young Choi, Long Mei Jin, Dexian Wang and Kyung Ho Row 465 **Protein Binding Study of Isoflavone, Perillyl Alcohol and S-Ibuprofen by High-Performance Frontal Analysis**
- Jihoon Im, Hun Yong Shin and Hwayong Kim 470 **Measurement and Correlation of Vapor-Liquid Equilibria of the Binary Carbon Dioxide-Chloroform Mixture System (Short Communication)**
- Chul Soo Lee and Jeong Won Kang 474 **On the Information and Methods for Computing Phase Equilibria and Thermodynamic Properties (Short Communication)**
- Sung Bin Park, Jung Woo Lee, Yong Soo Kim and Chul Soo Lee 479 **Numerical Mass Balances for Cross Flow Membrane Contactors and Their Approximations**
- Jae-Kyung Kim and Dong-Won Park 483 **Liquid-Liquid Equilibrium for the Quaternary System of o-Xylene(1)+Water(2)+Propionic Acid(3)+1-Butanol(4) at 298.15 K and Atmospheric Pressure**

MATERIALS (Organic, Inorganic, Electronic, Thin Films), POLYMER, FLUIDIZATION, PARTICLE TECHNOLOGY

-
- Sang-Hoon Kim, Ahmad Umar and Yoon-Bong Hahn 489 **Growth and Formation Mechanism of Sea Urchin-Like ZnO Nanostructures on Si**