Issue Highlights ............................................ 1035

Special Series: Experimental Methods
Experimental Methods in Chemical Engineering: Mass Spectrometry—MS .......... 1036
Patrice Perreault, Etienne Robert and Gregory S. Patience

Articles

Biotechnology, Biochemical and Biomedical Engineering
Bio-Scouring of Cotton Fabric and Enzymatic Degumming of Jute Fibres by a Thermo-Alkaline Recombinant Rhamnogalacturonan Lyase, CrRGLy from Clostridium thermocellum .......... 1043
Arun Dhillon, Vikky Rajulapati and Arun Goyal

Environment, Renewable Resources and Green Processes
Current Situation of Carbon Dioxide Capture, Storage, and Enhanced Oil Recovery in the Oil and Gas Industry .......... 1048
Emmanuel Adu, Yinzi Zhang and Dehua Liu

The Enhancement of Black Liquor Treatment by Applying a Natural Flocculant and Converting its Sludge to a High-Benefit Product .......................... 1077
Ren Amrani, Oktay Bani, Maryanto Maryanto, Ajeng Arum Sari and Yanni Sudiyani

Cleavage of Double Bond using Metal-Loaded ZSM-5 Zeolite Catalysts for Renewable Biochemical Application .......... 1086
Phan Huy Hoang, Bui Van Don and Nguyen Hoang Chuc

Impact of Glucose Concentration on Productivity and Yield of Hydrogen Production by the New Isolate Clostridium beijerinckii Br23 ........................................ 1092
Bruna Constante Riossea, Wilibaldo Schnidell and Valeria Regnatto

Phase Transition Properties, Chemical Purity, and Solubility of Coniferyl Alcohol and D-Mannose: Experimental and Cosmo-RS Predictions .......................... 1100
Mood Mohan, Tanmoy Banerjee and Vaibhav V. Gosw

Industrial Applications of Chemical Engineering
Characteristics of Zeolite-Modified NiMo/Al2O3 Catalysts and their Hydrotreating Performance for Light Cycled Oil .......... 1107
Erfeng Hu, Zongliu You, Lixin Zhao, Juan Wu, Haibo Meng, Lili Hao and Yuan Li

Interfacial and Electrochemical Phenomena
Evolution of Electronic Conductivity in a Ni/YSZ Electrode Fabricated by Electrophoretic Deposition ......................... 1114
Saeid Amiri, Robert E. Hayes and Partha Sarkar

New Materials, Nanomaterials and Nanotechnology
Effect of Sulphation on the Catalytic Activity of MIL-101 and the Activation Energy of an Esterification Reaction ........ 1121
Esra Yilmaz, Emine Sert and Ferhan Sami Atalay

Process Control, Systems Engineering and Statistics
A Fault Detection Method Based on Horizontal Visibility Graph-Integrated Complex Networks: Application to Complex Chemical Processes .......................... 1129
Zhiqiang Geng, Zun Wang, Haxia Hu, Yongming Han, Xiaoyong Lin and Yashua Zhong

Reaction Engineering, Chemical Kinetics and Catalysis
Effect of Alkaline-Earth Metals on Synthesis of Isobutyaldehyde from Methanol and Ethanol over Cu-MeO/Ti-SBA-15 Catalysts (Me = Mg, Ca, Sr, Ba) ......................... 1139
Junfeng Zhang, Meng Zhang, Yingquan Wu, Tao Zhang, Yihao Han and Yisheng Tan

Kinetics of the Reaction of Ethanol and Lactic Acid Catalyzed by Deep Eutectic Solvent Based on Benzyltrimethylammonium Chloride ........................................ 1144
Run Li, Weilan Xue, Xuanziang Zeng and Xinyue Shi

Gas Phase Dehydration of Glycerol to Acrolein over NaHSO4@Zr-MCM-41 Catalyst .............................. 1152
Jiunfei Ding, Caixia Yan, Tianlin Ma, Rong Shao, Wei Xu and Pengfei Wang

Separation Processes
Piperazine and Methyldiethanolamine Interrelationships in CO2 Absorption by Aqueous Amine Mixtures. Part I: Saturation Rates of Single-Reagent Solutions .......................... 1160
Camilla Costa, Marco Demartini, Renzo Di Felice, Maddalena Oliva and Paolo Pagliar

Experimental Investigation on Pressure Drop of a Laboratory-Scale Random Packing Column under Roll and Heave Motion ........................................ 1172
Yi Huang, Xiaoming Di, Jun Ma, Shujie Chen and Wenhua Wang
Recovery of Nickel and Cobalt from Nickel Laterite Leach Solution using Chelating Resins and Pre-Reducing Process

Amilton Barbosa Botelho Junior, Denise Croce Romano Espinosa, David Dreisinger and Jorge Alberto Soares Tenório

Transport Phenomena, Fluid Dynamics and Thermodynamics

Application of Nuclear Magnetic Resonance Permeability Models in Tight Reservoirs

Razieh Solatpour and Apostolos Kantzas

Understanding the Influence of Rheological Properties of Shear-Thinning Liquids on Segmented Flow in Microchannel using CLSVOF Based CFD Model

Somasekhara Goud Sontti, Pankaj G. Pallewar, Amritendu Bhusan Ghosh and Arnab Atta

Numerical Simulation of Polymer Filling Process by a Combined Finite Element/Discontinuous Galerkin/Level Set Method

Puyang Gao, Jie Ouyang and Wen Zhou