# **Korean Journal of Chemical Engineering**

**July 2021** Volume 38. Number 7 Korean J. Chem. Eng. 38(7) 1291-1530 Print ISSN 0256-1115 Online ISSN 1975-7220

### INVITED REVIEW PAPER

Yu Jung Sohn, Hee Taek Kim, Jeong Chan Joo, Jong-il Choi, and Si Jae Park

Kei-Anne Baritugo, Jina Son, 1291 Recent progress in metabolic engineering of Corynebacterium glutamicum for the production of C4, C5, and C6 chemicals

Nianfang Wang, and Doh C. Lee

Minsoo Kim, Gui-Min Kim, 1308 Radical-driven photocatalytic transformation of organic molecules

Lorenz Theodor Biegler 1317 A perspective on nonlinear model predictive control

### PROCESS SYSTEMS ENGINEERING, PROCESS SAFETY

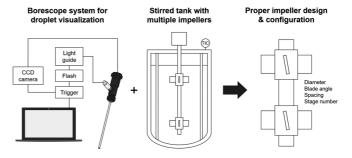
Derrick Adams, HyungWoong Ahn, JaeCheol Lee, and Min Oh

JaeHun Chang, GunHee Lee, 1333 Multiscale modeling and integration of a combined cycle power plant and a twotank thermal energy storage system with gPROMS and SimCentral

### TRANSPORT PHENOMENA

Jeil Park, Wooyoul Ahan, and Jae W. Lee

Effect of multiple impeller designs and configurations on the droplet size and uniformity in a 100 L scale stirred tank



Zhibin Sun, Jiecai Long, Yili Yang, and Xiwen Li

Baojun Shen, Xiaobin Zhan, Yu He, 1358 Computational fluid dynamic analysis of mass transfer and hydrodynamics in a planetary centrifugal bioreactor

## CATALYSIS, REACTION ENGINEERING

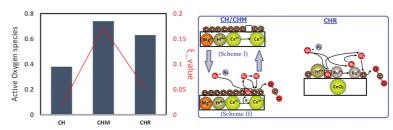
and Md. Ahmaruzzaman

Fei Zha, Xiaojun Guo, Xiaohua Tang, Haifeng Tian, and Yue Chang

Byung Hun Jeong, and Jung Hoon Park

Nitin Kumar Labhsetwar, Mudiyaru Subrahmanya Murari, and Harshini Dasari

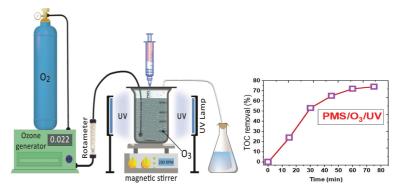
- Pamreishang Kasar 1370 Correlative HHV prediction from proximate and ultimate analysis of char obtained from co-cracking of residual fuel oil with plastics
- Jihui Yao, Jiapeng Jiao, Ruiqiang Liu, 1381 Template-assisted preparation of metal-modified SAPO-34 molecular sieves for the catalysis of methanol-to-olefins
- Byeong Jun Jeong, Min Chang Shin, 1394 Preparation and characteristics of wavy form microchannel reactors coated with H-ZSM-5 for the endothermic decomposition reaction of methylcyclohexane
- Hari Prasad Uppara, Sunit Kumar Singh, 1403 The catalytic activity of Ce-Hf, Ce-Hf-Mg mixed oxides and RuO<sub>2</sub>/HfO<sub>2</sub> deposited on CeO2: Role of superoxide/peroxide in soot oxidation reaction



### **ENVIRONMENTAL ENGINEERING**

Farshid Ghanbari, Masoumeh Khatebasreh, Mostafa Mahdavianpour, Ali Mashayekh-Salehi, Ehsan Aghayani, Kun-Yi Andrew Lin, and Behnam Kazemi Noredinvand

1416 Evaluation of peroxymonosulfate/O<sub>3</sub>/UV process on a real polluted water with landfill leachate: Feasibility and comparative study



- and Nalan Tekin
- Beyhan Erdem, Sezer Erdem, 1425 Cationic surfactant templated synthesis of magnetic mesoporous nanocomposites for efficient removal of Light Green
  - Gang Li 1438 Performance evaluation of low global warming potential working fluids as R134a alternatives for two-stage centrifugal chiller applications

### BIOTECHNOLOGY

Seo Young Jo, Yu Jung Sohn, Se Young Park, Jina Son, Jee In Yoo, Kei-Anne Baritugo, Yokimiko David, Kyoung Hee Kang, Hoyong Kim, Jong-il Choi, Mi Na Rhie, Hee Taek Kim, Jeong Chan Joo, and Si Jae Park

1452 Biosynthesis of polyhydroxyalkanoates from sugarcane molasses by recombinant Ralstonia eutropha strains

Jaekwang Kim and Jun Dong Park 1460 A thixotropic fluid flow around two sequentially aligned spheres

### SEPARATION TECHNOLOGY, THERMODYNAMICS

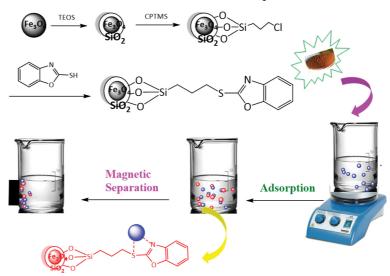
- Nikoo Soltani and Omid Bakhtiari 1469 Preparation of alumina nanotubes for incorporation into CO<sub>2</sub> permselective Pebaxbased nanocomposite membranes
- Md. Mofaqkharur Rahman, Shamim Mahbub, Mezbah Hossain, Mohammed Abdullah Khan, Md. Ruhul Amin, Ali S. Alqahtani, Mohammad Z. Ahmed, Mohammed S. Algahtani, and Omar M. Almarfadi
- Md. Anamul Hoque, 1487 Spectroscopic and cloud point studies of the interaction and thermodynamics of ciprofloxacin hydrochloride+surfactants mixture in different solvents: Effect of temperature and composition

Ali H. Jawad, Ahmed Saud Abdulhameed, M. A. K. M. Hanafiah, Zeid A. ALOthman, Mohammad Rizwan Khan, and S. N. Surip

Numerical desirability function for adsorption of methylene blue dye by sulfonated pomegranate peel biochar: Modeling, kinetic, isotherm, thermodynamic, and mechanism study

and Vahideh Khorramabadi

Maryam Ariannezhad, Davood Habibi, 1510 **The nano-magnetite-loaded 2-mercaptobenzoxazole as an adsorbent for the selective removal of the Pb<sup>2+</sup>, Ni<sup>2+</sup> and Cd<sup>2+</sup> ions from aqueous solutions** 



MATERIALS (Organic, Inorganic, Electronic, Thin Films)

Hyo-Young Kim and Young-Wan Ju 1522 Influence of post-heat treatment on photocatalytic activity in metal-embedded  $TiO_2$  nanofibers