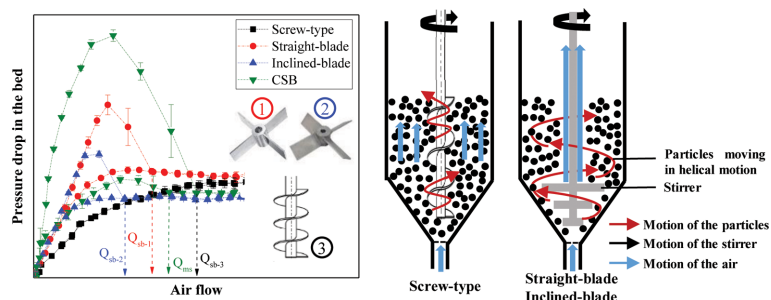


INVITED REVIEW PAPER

- Sierra Schluskel and Stephanie Kwon 2883 **A review of formic acid decomposition routes on transition metals for its potential use as a liquid H₂ carrier**

REVIEW PAPER

- João Pedro Alves de Azevedo Barros, Fábio Bentes Freire, and José Teixeira Freire 2896 **Fluid dynamics, velocity profile and average cycle time in different configurations of the modified mechanically stirred spouted bed**



PROCESS SYSTEMS ENGINEERING, PROCESS SAFETY

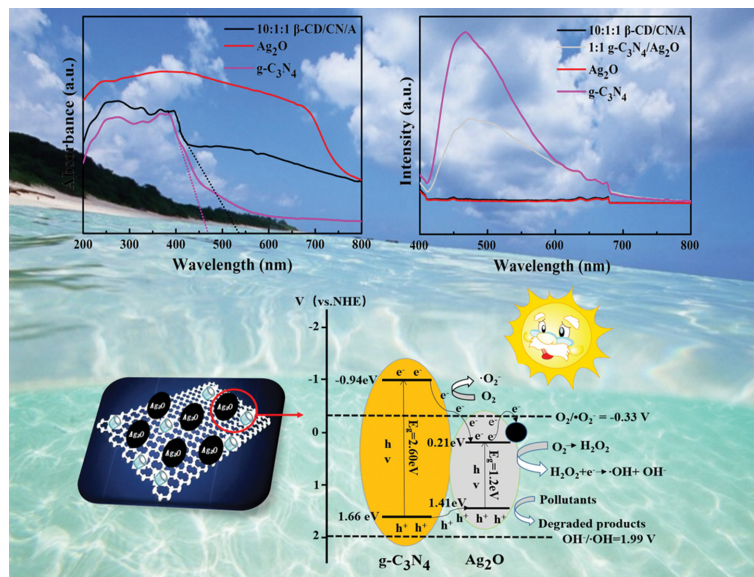
- Shin Hyuk Kim, Hongbum Choi, Yongmi Jung, and Jay H. Lee 2907 **Numerical analysis of the coupling between heat transfer and pyrolysis in heat-not-burn tobacco using computational fluid dynamics**
- Chung Keun Chae, Byung Heung Park, Seung Kyu Kang, Jae-Ou Choi, Jin Hyung Park, Wangyun Won, and Yeonsoo Kim 2916 **Development of real time responding hydrogen fueling protocol and its risk assessment**
- Hyeon Park, Jong Wook Bae, Gookhee Kim, and Myung-June Park 2925 **Techno-economic analysis of the integrated DME production process: Effects of different separation trains and recycling strategies**

TRANSPORT PHENOMENA

- Zhiyuan Liu, Peng Wang, and Ben Zhao 2935 **Numerical investigation of the rotating instability uniqueness in a MWe scale supercritical carbon dioxide centrifugal compressor**
- Hasan Alimoradi, Mehrzad Shams, and Nasser Ashgriz 2945 **Bubble behavior and nucleation site density in subcooled flow boiling using a novel method for simulating the microstructure of surface roughness**
- Magdalena Cudak and Rafał Rakoczy 2959 **Hydrodynamics of gas-liquid and biphasic-gas-liquid systems in stirred tanks of different scales**

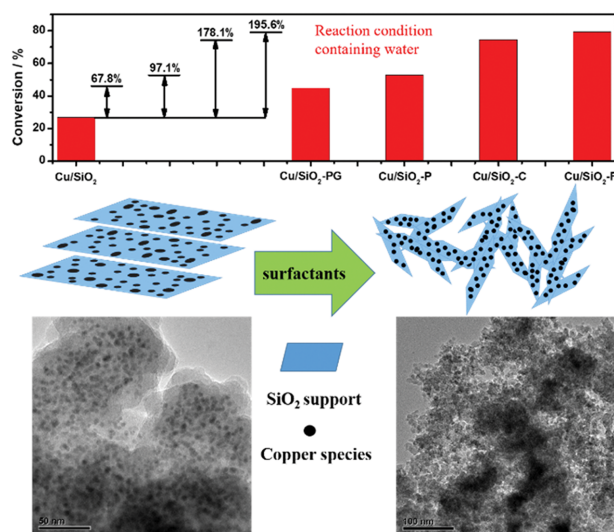
Xue Li, Tingting Liu, Fei Tian,
Xiyang Tao, and Zhansheng Wu

2972 **Enhanced carrier transport and visible light response in CA- β -CD/g- C_3N_4 /Ag $_2$ O 2D/0D heterostructures functionalized with cyclodextrin for effective organic degradation**



Zheng Chen, Xueying Zhao,
Shuwei Wei, Dengfeng Wang,
Xuelan Zhang, and Jianfeng Shan

2983 **The improvement effect of surfactants on hydrogenation at condition containing water for Cu/SiO $_2$ catalysts**



The addition of surfactants could increase copper dispersion, decrease particle size and produce many pores to provide more chances for reactants to touch active sites so that the negative effects of water can be counteracted.

Lakshya Mathur, Hohan Bae,
Yeon Namgung, Jun-Young Park,
and Sun-Ju Song

2991 **Flow behavior of gadolinium doped ceria under different polymeric and hydrodynamic environment for tape casting application**

ENERGY

Latifatu Mohammed, Bismark Boating,
Manasi Mwemezi, Louis Hamenu,
Alfred Madzvamuse, Alex Nyarko,
Mutala Mohammed, William Oduro,
Francis Boateng Agyenim,
Yong Min Lee, and Jang Myoun Ko

3003 **EMI-BF $_4$ electrolyte and Al $_2$ O $_3$ /PVDF-HFP modified PE separator for high capacitance retention and cycle stability in supercapacitors**

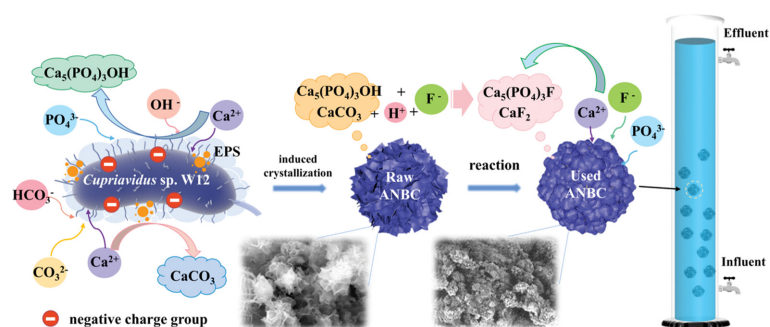
Hamed Khoshkam, Kazem Atashkari,
and Mehdi Borji

3012 **Numerical investigation of factors affecting carbon deposition and interaction on SOFC performance over time**

- Rahim Zahedi, Alireza Aslani, Mohammad Ali Nasle Seraji, and Zahra Zolfaghari 3021 **Advanced bibliometric analysis on the coupling of energetic dark greenhouse with natural gas combined cycle power plant for CO₂ capture**

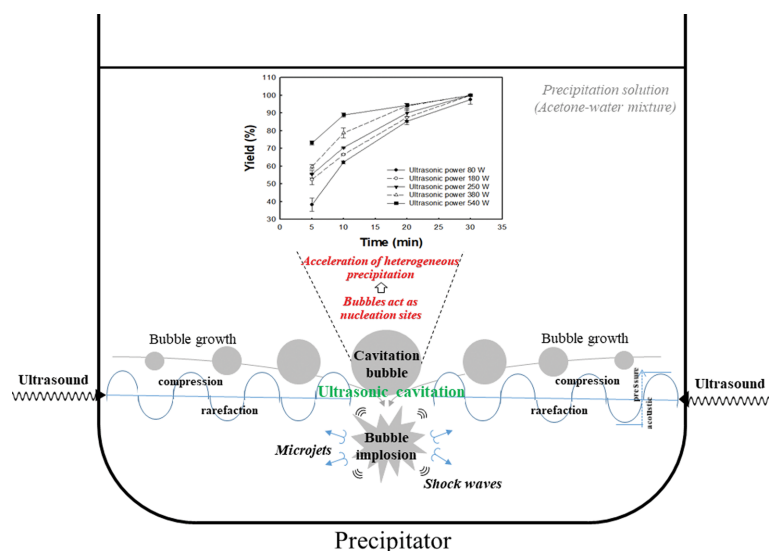
ENVIRONMENTAL ENGINEERING

- Jing Hu, Jiabin Zhou, Tianlei Zhang, Su Liu, and Ke Du 3032 **Characterization and performance of Sm_xA_{1-x}MnO₃ (A=Ce, Sr, Ca) perovskite for efficient catalytic oxidation of toluene**
- Pan Zhang, Yuetong Zhao, Xiangfeng Tian, Yanxi Ji, Yuxuan Shu, Kun Fu, Dong Fu, and Lemeng Wang 3039 **Selective absorption of H₂S and CO₂ from simulated coke oven gas by aqueous blends of N-methyldiethanolamine and tetramethylammonium glycine**
- Bharat Bhargawa, Yue Xu, Ik-Keun Yoo, Sung Gu Kang, and Keungarp Ryu 3048 **Enhanced adsorption of lead ions by enzymatically synthesized poly(*m*-phenylenediamine)-graphene oxide composites**
- Zhenyu Zhai, Amjad Ali, Junfeng Su, Zhenle Hao, Jiaran Liu, and Zhao Wang 3055 **Microbially induced calcium precipitation based anaerobic biosynthetic crystals for removal of F⁻ and Ca²⁺ in groundwater: Performance optimization, kinetics, and reactor operation**

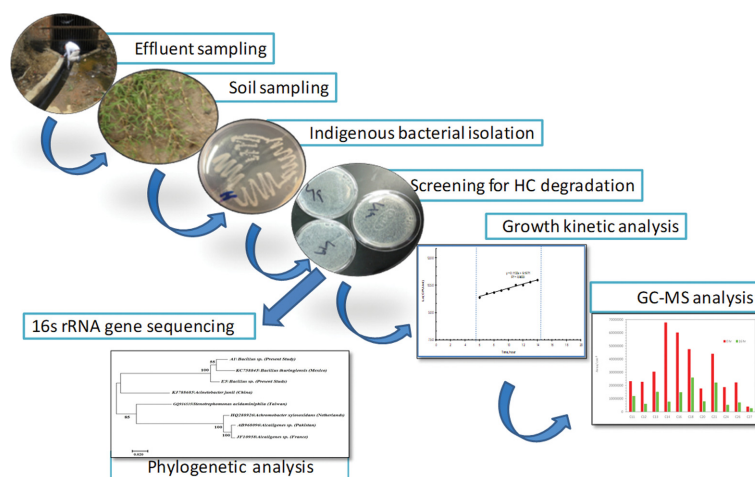


BIOTECHNOLOGY

- Jieun Hong and Jin-Hyun Kim 3067 **Ultrasonic cavitation bubble- and gas bubble-assisted fractional precipitation for the purification of (+)-dihydromyricetin**



Shazra Khalid, Aneela Iqbal, Asif Javed, Jamshaid Rashid, Ihsan ul Haq, Mohamed Abou El-Fetouh Barakat, and Rajeev Kumar 3074 **Analysis of diesel hydrocarbon decomposition using efficient indigenous bacterial isolate: Bacterial growth and biodegradation kinetics**



SEPARATION TECHNOLOGY, THERMODYNAMICS

- Wenxiu Zhu, Xinghao Liu, Zhaoguang Yang, and Haipu Li 3083 **Synthesis of manganese-iron oxides/activated carbon as a highly effective adsorbent for sulfamerazine pollutant removal**
- Mahya Samari, Sirus Zinadini, Ali Akbar Zinatizadeh, Mohammad Jafarzadeh, and Foad Gholami 3092 **A new antifouling metal-organic framework based UF membrane for oil-water separation: A comparative study on the effect of MOF (UiO-66-NH₂) ligand modification**
- Aizaz Ali Farman, Muhammad Irfan, Noor Ul Amin, Zaib Jahan, Xiangju Song, Heqing Jiang, and Saeed Gul 3102 **Evaluation of sodium acetate and glucose as minor additives with calcium chloride as optimum mixed draw solutes for fruit juice concentration via forward osmosis**
- Cai-Kian How, Soroush Soltani, Teong-Guan Chuah, Eng-Tong Phuah, and Thomas Shean-Yaw Choong 3109 **Adsorption properties of β -carotene on mesoporous carbon-coated honeycomb monolith: Kinetics, thermodynamics, and regeneration studies**

MATERIALS (Organic, Inorganic, Electronic, Thin Films)

- Cheon Kwang Ko and Won Gyu Lee 3121 **Dissolution of copper and copper oxide in aqueous solution containing amine or carboxylic acid**
- Sangmin Lee, Min Hyung Lee, Kye Sang Yoo, and Seongho Song 3129 **Assessment of MOF-801 synthesis for toluene adsorption by using design of experiment methodology**
- Tao Wan, Songsong He, Tairan Wang, Jian Wang, Mingrui Yu, Yang Jia, and Qi Tang 3138 **Synthesis of polyethylenimine-modified magnetic hydrogel nanocomposite adsorbents for heavy metals removal**
- Hyeonsoo Lim, Mingyu Shin, Chanho Noh, Eeungmo Koo, Yongchai Kwon, and Kun Yong Chung 3146 **Performance evaluation of aqueous all iron redox flow batteries using heat treated graphite felt electrode**

POLYMER, INDUSTRIAL CHEMISTRY

- Nisar Ahmad, Samina Karim, Dilshad Hussain, Young Sun Mok, and Ghayas Uddin Siddiqui 3155 **Efficient dual adsorption of eosinY and methylene blue from aqueous solution using nanocomposite of graphene oxide nanosheets and ZnO nanospheres**
- Jian Peng, Wei Sun, Haisheng Han, Le Xie, and Yao Xiao 3165 **Experimental and numerical simulation study on the hydrodynamic characteristics of spherical and irregular-shaped particles in a 3D liquid-fluidized bed**