

THE CANADIAN JOURNAL OF CHEMICAL ENGINEERING

APRIL 2026

VOLUME 104 NUMBER 4

Issue Highlights 1651

Announcement

2026 winner of the best graduate student paper award 1652
Shahab Ghasemi

2026 winner of the lectureship award 1653
Jinguang Hu

CSCHE-IICHE Symposia on Biofuels, Biochemicals, and Biomaterials Special Issue Section

Preface for the special issue section on “CSCHE-IICHE symposia on biofuels, biochemicals, and biomaterials”. 1654
Sonil Nanda, Ajay K. Dalai and Prasenjit Mondal

Integrated and closed-loop biorefinery strategies for efficient waste valorization and biofuel production 1656
Marcos Paulo Patta Granado, Prakhar Talwar, Sahil Sahil, Andrea Cressoni De Conti, Sonil Nanda and Janusz A. Kozinski

Revisiting acidulation for tall oil and lignin manufacturing 1677
Thomas Aro, Weijue Gao and Pedram Fatehi

Catalytic hydrothermal liquefaction of lignocellulosic biomass for biocrude production and process optimization 1692
Rameshbabu Divyabharathi, Paravaikkarasupillai Subramanian and Amirthalingam Kamaraj

Characterization of pyrolytic products from the thermochemical conversion of textile waste 1713
Anjali Prasad, Deepak Kumar Ojha and Sivamohan N. Reddy

Supercritical water deasphalting and desulphurization of heavy fuel oil with comprehensive molecular-level analysis and techno-economic analysis 1727
Biswajit Saha, Sundaramurthy Vedachalam, Nathalie Baquerizo, Ajay K. Dalai, Aiping Chen, Saumitra Saxena and Bassam Dally

Glycerol carbonate formation from glycerol and dimethyl carbonate using lithium-based catalysts 1743
Parvaneh Koranian, Ajay Kumar Dalai and Ramaswami Sammynaiken

Coupling heat transfer modelling and Monte Carlo simulations for integrated biomass combustion analysis 1755
Kunal Jogi, Sree Harsha Bhimineni, Prateek K. Jha and Deepak Kumar Ojha

Editor's Choice

Review of recent advances in the design, synthesis, and modification of biochar for remediation of heavy metal pollution in water 1769
Soumik Chakma, Mehedi Hasan, Sudip K. Rakshit, Janusz Kozinski and Kang Kang

Synthesis of agricultural biomass-derived biochar-based epoxy coatings with corrosion resistance and surface protection properties 1796
Bijayalaxmi Maharana, Rudra Narayan Mohapatra, Biswa R. Patra, Ranjita Swain, Sunita Routray, Debarpita Ghosal, Sonil Nanda and Kabir Biswal

A study on the adsorptive removal of chromium (VI) using zerovalent iron nanoparticles prepared from *Aegle marmelos* fruit shell: Kinetic and isotherm insights. 1809
Vartika Nishad, Shravan Kumar and Susarla V. A. R. Sastry

Performance evaluation, scale-up design, and economic analysis for remediation of iron-containing wastewater using cow manure biocarbon 1820
Ashish Kapoor, Muthamilselvi Ponnuchamy, P. Senthil Kumar, Dan Bahadur Pal, Anjali Awasthi, Meenu Mariam Jacob, Balamurugan Pakkirisamy, Manjula Rajagopal and Gayathri Rangasamy

Study on iron anchoring methods for magnetic biochar: Characterization, functional mechanism, and RBBR dye removal 1836
Soumik Chakma, Shrikanta Sutradhar, Sudip K. Rakshit, Pedram Fatehi and Kang Kang

Sustainable recycling of spent Li-ion batteries through waste pine needle-assisted carbothermal reduction for lithium recovery 1852
Yash Srivastava, Pushpendra Kumar and Prasenjit Mondal

Development of bio-lubricants from *Madhuca longifolia* and *Ricinus communis* oils via 3-step chemical modification process for enhanced properties 1863
Mansi Tiwari, Susarla V. A. R. Sastry and Sandeep Kumar

Article

Biotechnology, Biochemical, and Biomedical Engineering

Investigation of microalgal tolerance and growth in simulated tailings pond water containing naphthenic acids 1877
Amin Kalbasi and Amarjeet Bassi

Environment, Renewable Resources, Green Processes

Simulation of pesticide wastewater treatment process using electro-Fenton method: In situ production of H₂O₂ 1889
Masoud Pirhadi, Mohsen Mohammadi and Reza Davarnejad

Advancements in the synthesis of furfural and phenol from lignocellulosic biomass utilizing waste-derived or naturally occurring catalysts: A mini review 1896
Aryasomayajula Venkata Satya Lakshmi Sai Bharadwaj, Hafila S. Khairun, Agrima Pandey, Ripsa Rani Nayak, Abdullah M. Aitani, Vardawat Darshil, Dipesh Shikchand Patle and Navneet Kumar Gupta

Green synthesis of MO₂ and Ag/MO₂ (M = Ce and Ti) nanomaterials using Tulsi leaf extract and its application for CO oxidation: Insights into surface interaction 1909
Vishal B. Upare, Harshitha Duddela, Ajayraj A, Amala Joy and Anjana P. Anantharaman

Optimized syngas mixer design for dual-fuel diesel engines: A CFD-driven approach to enhance efficiency 1923
Kholil Nur Ibrahim, Arif Rahman Saleh, Sigit Mujiarto, Tri Retno Setiyawati and Nila Nurlina

Industrial Applications of Chemical Engineering Principles

Ultrasound-assisted cooling crystallization of edaravone for improving the crystal characteristics 1935
Tushar Thakare, Ashish V. Mohod and Parag R. Gogate

New Materials, Nanomaterials, and Nanotechnology Engineering

Seed crystal/MgCl₂-assisting synthesis hierarchical zeolite ZSM-5 in the absence of organic templates 1950
Hongtao Liu, Zhaojun Liu, Guonian Yang, Jiaying Gao, Jiujiang Wang, Gen Li, Xinye Fan, Hongjuan Zhao and Honghai Liu

Machine learning and nanoparticles for enhancing condensate recovery in gas condensate reservoirs 1959
Ali Akbari, Fatemeh Seifi, Yousef Kazemzadeh and Soroush Ahmadi

Preparation of water self-dispersible nano-CaCO₃ and its enhancement of P(AM-SA-MO8) gel for profile control 1990
Cuiting Ren, Xiujun Wang, Jian Zhang, Shichao Li, Hongquan Fu, Zhao Hua and Shenwen Fang

Selective hydrogenation of methyl benzoate to benzaldehyde over a manganese-based catalyst with weak acidity centres 2009
Guofeng Wang, Yin Zhang, Chuanzhi Xu, Fang Wang, Kuai Yu and Mei Zhang

Process Control, Systems Engineering, and Statistics

Dynamic accelerated solvent extraction for faster oil sands oil, water, and solids determination and solids cleaning 2020
Ceanna Ting-Yan Cheung and Matthew Ripmeester

Intelligent online process fault diagnosis through integrating Andrews function, autoencoder, and neural networks 2033
Shengkai Wang and Jie Zhang

A novel VMD-LassoNet-iTransformer framework with enhanced feature fusion for dynamic NO_x forecasting in flexible utility boilers 2055
Lai Wei, Cong Yu, Yukun Zhu, Wei Fan, Haiquan Yu and Ling Shi

Industrial prediction method based on graph sampling and aggregation of temporal features 2083
Shiwei Gao, Xiao Li, Wenbo Yang, Jingjing Xie and Pengxue Yun

Advanced fluidized bed reactor performance: Optimizing residence time distribution through helical screw induced rotation (HSIR) 2104
Arash Javanmard, Fathiah Mohamed Zuki, Wan Mohd Ashri Wan Daud and Muhamad Fazly Abdul Patah

A novel deep-learning fault detection model of MSLR-transformer for chemical process 2121
Ying Xie, Xiaotong Wu, Yingjie Zhu and Xin Sha

Flow field analysis and design optimization strategies for double-layer dislocated-punched impellers 2141
Xi Wu, Shuai Jiang, Wei Du, Wei Chen and Hongjun Li

Separation Processes

Online optimization of simulated moving bed processes based on deep learning models 2157
Ling Li, Xufan Li and Yuhuan Chen

Transport Phenomena, Fluid Dynamics, and Thermodynamics

Experimental study and numerical simulation of microchannel heat exchanger structure optimization based on heat transfer and flow 2182
Qingyang Zhang, Chulin Yu, Yulin Cui, Sai Yang, Bin Feng Liu and Hongyan Liu