

THE CANADIAN JOURNAL OF CHEMICAL ENGINEERING

OCTOBER 2026

VOLUME 104 NUMBER 10

Issue Highlights 5175

Experimental Methods in Chemical Engineering Special Series

Editor's Choice

Experimental methods in chemical engineering: Magnetometry. . . 5176
Michael Claeys, Dominic De Oliveira, Gregory S. Patience and M. Olga Guerrero-Pérez

Perspectives in Chemical Engineering Special Series

On the defence of responsible human judgement in peer review . . . 5189
João B. P. Soares and Thomas A. Adams II

Sustainable Aviation Fuel (SAF) Special Issue Section

Sustainable aviation fuel (SAF) 5199
Arno de Klerk

Influence of C₈–C₁₀ hydrocarbons on the flash point behaviour of synthetic kerosene for jet fuel blending 5201
Joao Felipe Pereira Bassane, Meet H. Shah and Arno de Klerk

Hydroprocessing of synthetic kerosene over a non-sulphided Ni/Al₂O₃ catalyst: Impact of alcohols and ketones on alkene conversion 5229
Garima Chauhan, Felix Link, Cibebe Melo Halmenschlager and Arno de Klerk

Alcohol-to-jet kerosene hydrotreating: Impact of oxygenates on product properties 5242
Laine B. Pereira, Cibebe Melo Halmenschlager and Arno de Klerk

Thermal oxidative and thermal stability of acyclic alkenes at 260–325°C 5253
Muhammad Nurunnabi Siddiquee, Pranav Girishbhai Patel, Laine Badaro Pereira, Cibebe Melo Halmenschlager and Arno de Klerk

Durene conversion in a methanol-to-jet process: Exploring conversion at 150–350°C over different acid catalysts 5267
Aida G. Velasco Ortiz, Risha Raju and Arno de Klerk

C₂ oligomerization over H-ZSM-5 to synthetic kerosene 5283
Cibebe Melo Halmenschlager, Laine B. Pereira and Arno de Klerk

Fischer–Tropsch tail gas oligomerization to synthetic kerosene: Impact of low concentration of carbonyl compounds 5293
Joao Felipe Pereira Bassane, Roshan Hirani and Arno de Klerk

Impact of wax hydrocracking severity on product properties 5310
Yanet Rodriguez Herrero, Juan Camilo Tovar Casanova, Sthiti C. Tuli, Abhijith Vivek and Arno de Klerk

Article

Biotechnology, Biochemical, and Biomedical Engineering

Artificial intelligence in enzyme catalysis: Emerging trends and applications in biocatalyst engineering 5328
Misael Bessa Sales, Francisco Izaias da Silva Aires, Paulo Gonçalves de Sousa Junior, Calebe Da Rocha Silva, Emanuel Lino Rodrigues, Maria Cristiane Martins de Souza and José C. S. dos Santos

Nano-enzyme engineering: Advancing enzyme immobilization for industrial and environmental applications 5350
Muhammad Irfan, Shamsa Shabbir, Wajiha Ali, Muhammad Amir, Arslan Shafi, Shahida Hameed, Shoukat Sajad and Muhammad Rafiq

Environment, Renewable Resources, Green Processes

Antisolvent crystallization of lithium hydroxide monohydrate: Significant factors and kinetics analysis 5383
Chentao He and Liuyin Xia

Iron(III)-loaded cation exchange resin: A dual approach for aqueous H₂S removal and biogas desulphurization 5397
Matheus Damásio Thrun, Renata Mello Giona, Eduardo Eynog, Eduardo Borges Lied, Laércio Mantovani Frare, Ismael Laurindo Costa Junior and Ilton José Baraldi

Unravelling stability mechanisms in petroleum coke–sludge slurry: A component-decoupled study on the rheological and structural effects of oily sludge 5409
Xing Ma, Xinyu Ren, Zhiguo Shao, Fan Nie, Jiaofei Wang, Yonghui Bai, Xudong Song, Peng Lv and Guangsu Yu

Industrial Applications of Chemical Engineering Principles

Effects of NH₃ co-firing ratios on performance of a 500 MW_e pulverized coal combustor using a compartment model 5424
Son Ich Ngo, Hai Hung Pham, Bay Van Tran, Thanh Trung Bui, Thanh Tam Thi Nguyen, Hieu Trung Bui, Sivanappan Kumar and Khoi Hoang Nguyen

Process optimization and techno-economic evaluation of a nanomembrane–AOP hybrid semi-pilot system for antibiotic abatement 5435
Shrabana Pal, Shaikh Z. Ahammad, Sankha Chakraborty and Parimal Pal

Historical analysis of major accidents in the American chemical industry 5458
Adriana Palacios, Erika Palacios-Rosas, German Miranda-Flores and Ernesto Gael Amador-Varela

Multi-stage multi-resolution feature selection and dual attention BLSTM transfer network for final quality prediction of small-batch batch process	5469
<i>Hongjuan Yao and Shihai Zhao</i>	

New Materials, Nanomaterials, and Nanotechnology Engineering

Sodium levulinate-assisted detection of copper ions in aqueous solutions using UV–Vis quantification	5485
<i>Jéssyca E. S. Pereira, Eduardo L. Barros Neto, Paula F. P. Nascimento, Lindemberg J. N. Duarte, Ruan L. S. Ferreira and Jean Michel Lavoie</i>	

Simulation of magneto-convection nanofluid flow past a vertical semi-infinite plate with Hall current and ion-slip phenomena	5494
<i>Shaik Abdul Gaffar, Osman Anwar Beg and Pedakamu Ramesh Reddy</i>	

Process Control, Systems Engineering, and Statistics

Two-dimensional iterative learning robust H _∞ optimization and linear quadratic fault-tolerant control design for uncertain batch processes	5520
<i>Pengwei Yuan, Jianjun Bai and Hongbo Zou</i>	

The effects of different perforated structures on fluid mixing characteristics of rotational–perforated static mixers.	5539
<i>Xuefang Gao, Dewu Wang, Yan Liu, Ruojin Wang, Baisong Hu, Hongrui Wei, Lei Wang, Shaofeng Zhang and Meng Tang</i>	

A fast and stable fault diagnosis framework for industrial processes using a reconstruction-based autoencoder and NSGA-II.	5561
<i>Kangshu Ying, Baoyu Zhu, Shaojun Ren and Fengqi Si</i>	

Deep variational canonical correlation analysis for intelligent industrial process monitoring and anomaly detection	5577
<i>Zhaosheng Zhang and Junwei Hou</i>	

Hierarchical data-driven adaptive quality control for a pharmaceutical feeding-blending unit subjected to external and internal disturbances	5593
<i>Zhengsong Wang, Dezuo Zhao, Xiaochen Li, Yanqiu Yang and Xiaopeng Sha</i>	

Two-dimensional iterative learning control under infinite horizon optimization for batch processes with partial actuator failures	5606
<i>Chonggao Hu, Jianjun Bai and Hongbo Zou</i>	

A combined approach for predicting liquid loading onset via clustering and convolutional neural networks	5626
<i>Qinghua Wang, Honglan Zou, Chong Liang, Shihao Zhang, Hao Jia and Jianjun Zhu</i>	

Reaction Engineering, Chemical Kinetics, and Catalysis

Hybrid machine learning and genetic algorithm approach for catalyst and process optimization in Fischer–Tropsch synthesis toward sustainable fuel production	5641
<i>Doaa M. Hassan, Ryan Gosselin and Nicolas Abatzoglou</i>	

Kinetic study of direct catalytic cracking of paraffinic base crude oil to light olefins	5674
<i>Youbing Zhu, Xinrui Bai, Chong Yao, Nianming Jiao, Maoming Gong, Xu Zheng, Hongyan Wang and Hui Wang</i>	

A novel oxidation–reduction method for efficient synthesizing <i>tert</i> -butylhydroquinone based on the combination of microchannel reactors and batch reactors	5687
<i>Yongxia Zhang, Zhangyi Gao, Yunfei He, Houjun Wei, Ping Liu and Jiqin Zhu</i>	

Process optimization and reaction dynamics of MgCO ₃ · 3H ₂ O prepared by impinging stream co-precipitation method	5701
<i>Jianwei Zhang, Hao Li, Ying Feng, Xin Dong and Xianhong Zou</i>	

Sintering of catalytic metal nanoparticles under exothermic conditions in an adiabatic fixed-bed reactor	5716
<i>Vladimir P. Zhdanov</i>	

Separation Processes

Carbon monoxide adsorption on NaY zeolite and impregnated with 5% niobium: Characteristics and fixed-bed study	5725
<i>Elson Oliveira, Karina Querne de Carvalho, Erika Pereira Felix and Roberta C. P. Rizzo-Domingues</i>	

Selective separation of copper and cadmium in aqueous solution using bis-picolylamine functionalized resin	5741
<i>Salem Elfeghe, Fakhri Ali Salem Mohammed, Yu Zhang, Sharmin Sultana Israt, Cui Lin, Ramin Azargohar and Yahui Zhang</i>	

Transport Phenomena, Fluid Dynamics, and Thermodynamics

Rheological and settling behaviour of multi-component mineral particle suspensions–Semi-empirical models	5751
<i>Mandakini Padhi, Mohan Anand, Mangadoddy Narasimha and Aubrey Mainza</i>	

Correction

Corrigendum to ‘Trade-offs in stability and activity: A study of ordered mesoporous alumina and γ-Al ₂ O ₃ supported Ni catalysts for CO ₂ methanation’	5771
--	------