

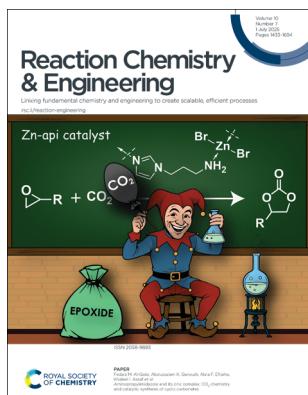
Reaction Chemistry & Engineering

Bridging the gap between chemistry and chemical engineering
rsc.li/reaction-engineering

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 2058-9883 CODEN RCEEBW 10(7) 1433–1694 (2025)



Cover

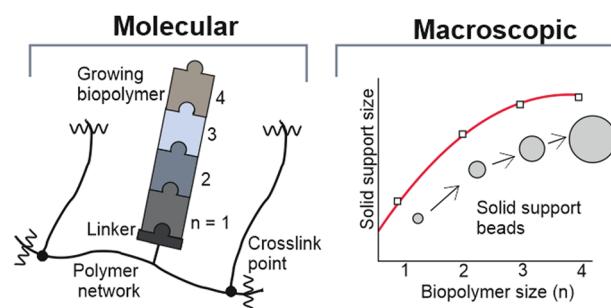
See Feda'a M. Al-Qaisi,
Abdussalam K. Qaroush,
Ala'a F. Eftaiha,
Khaleel I. Assaf *et al.*,
pp. 1461–1472.
Image reproduced by permission
of A. Eftaiha and K. Assaf from
React. Chem. Eng., 2025, 10,
1461.

REVIEW

1442

Physicochemical aspects of solid phase synthesis using cross-linked polymeric matrices

Sebastián Pinzón-López, Eric T. Sletten,
Matthias Kraume, Peter H. Seeberger*
and José Dangad-Flores*

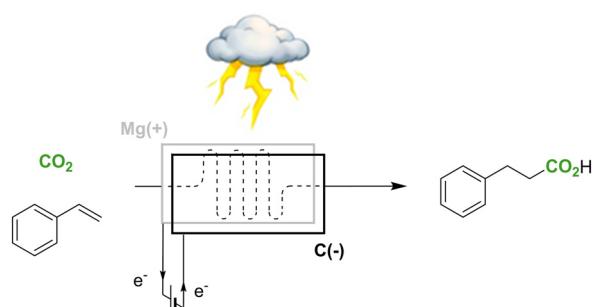


COMMUNICATION

1455

Electrochemical hydrocarboxylation of styrene with CO₂ in continuous flow

Jonas Mortier, Christian V. Stevens
and Thomas S. A. Heugebaert*



Advance your career in science

with professional recognition that showcases your **experience, expertise and dedication**

Stand out from the crowd

Prove your commitment to attaining excellence in your field

Gain the recognition you deserve

Achieve a professional qualification that inspires confidence and trust

Unlock your career potential

Apply for our professional registers (RSci, RSciTech) or chartered status (CChem, CSci, CEnv)

Apply now

rsc.li/professional-development

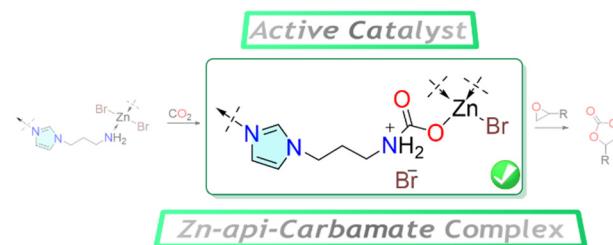


PAPERS

1461

Aminopropylimidazole and its zinc complex: CO₂ chemistry and catalytic synthesis of cyclic carbonates

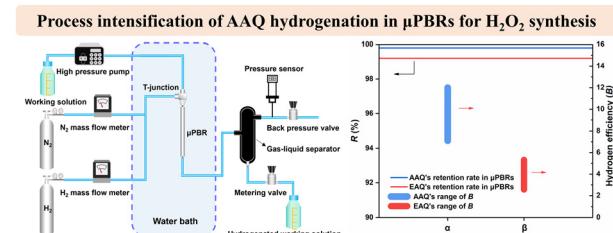
Feda'a M. Al-Qaisi,* Abdussalam K. Qaroush,* Ahmad M. Ala'mar, Ala'a F. Eftaiha,* Khaleel I. Assaf* and Timo Repo



1473

Process intensification of 2-aminanthraquinone hydrogenation in a micro-packed-bed reactor for H₂O₂ synthesis

Junjie Wang, Lin Sheng, Qichen Shang, Jian Deng* and Guangsheng Luo*



1487

Influence of Brønsted and Lewis acidity on the selective synthesis of BPMF from 5-HMF using zeolite-based catalysts

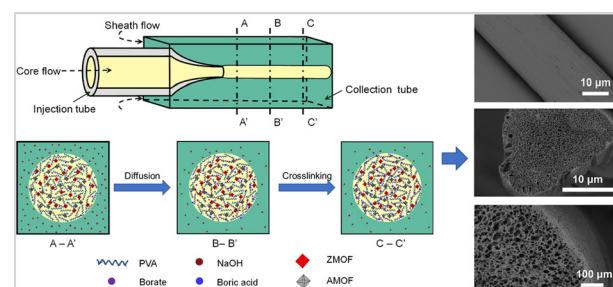
Srujal P. Rana and Paresh H. Rana*



1497

Microfluidic preparation and antibacterial properties of polyvinyl alcohol hydrogel microfibers loaded with MOF microparticles

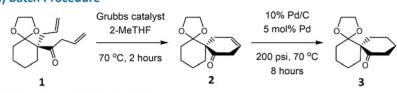
Ning Zhao, Shi-Yu Liu, Zhuang Liu, Xiao-Jie Ju, Rui Xie, Wei Wang,* Da-Wei Pan* and Liang-Yin Chu



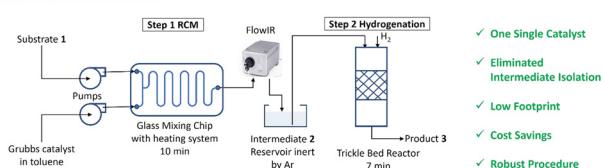
PAPERS

1508

a) Batch Procedure



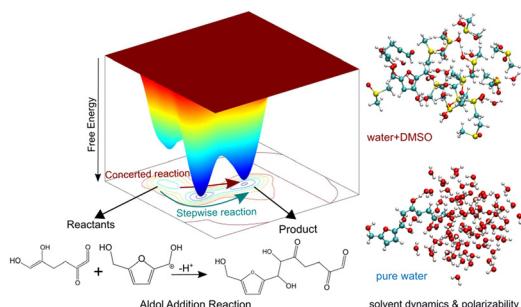
b) Telescopcd Flow Procedure



Synthesis of a spiroketone intermediate featuring a green and sustainable telescoped flow process

Shuoxun Wang,* Hao Wu, Yongda Zhang and Frederic Buono*

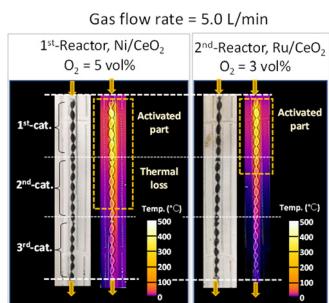
1517



How the addition of a polar aprotic solvent alters aldol-addition kinetics: exploring the role of solvent molecules and their dynamics

José Carlos Velasco Calderón and Samir H. Mushrif*

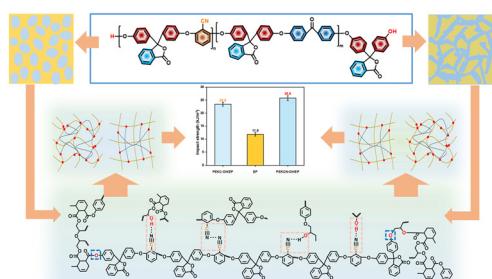
1527



Multi-stage spiral-type structured catalyst system for direct large-scale methanation of industrial CO2 emissions: a feasibility study

Hiroshi Akama, Ryo Watanabe,* Priyanka Verma and Choji Fukuhara*

1539



Synthesis of nitrile-containing reactive phenolphthalein polyaryletherketone and synergistic toughening research on the toughening of epoxy resin—phase structure, mechanical and thermal properties

Jiawei Liu, Tongjia Zhang, Shoutian Qiu, Lixin Song, Guangyuan Zhou and Honghua Wang*

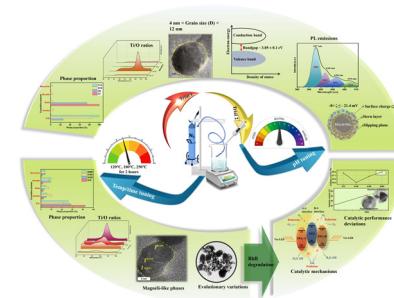


PAPERS

1551

Scalable phase-rich mixed oxide/perovskites: hetero-interfacial tuning catalysed photocatalysis via pH/temperature regulations

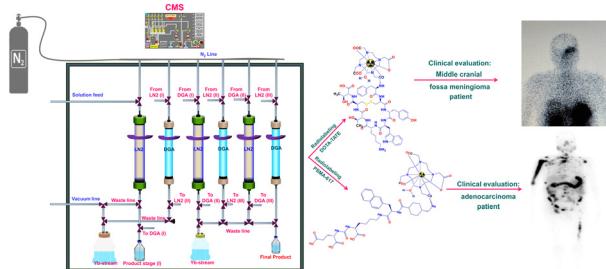
Dharanya. C and Gnanaprakash Dharmalingam*



1559

A PLC based semi-automated extraction chromatographic separation system for the isolation of medical grade no-carrier-added lutetium-177 for targeted cancer therapy

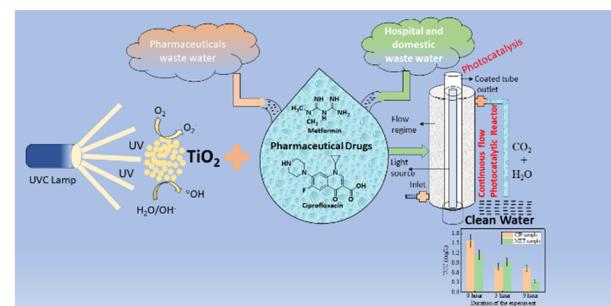
Dheeraj Kumar, Aaditya Shah, Varun Nair, B. K. Tiwary, N. C. Joseph, Abhishek K. Sharma, Arpit Mitra, Navin Sakhare, Sanjeev Kumar, Chanda Arjun, K. V. V. Nair, Anupam Mathur,* Sudipta Chakraborty, Usha Pandey, Ameya Puranik, Archi Agrawal and Venkatesh Rangarajan



1577

Photocatalytic degradation of ciprofloxacin and metformin in a continuous-flow tubular reactor

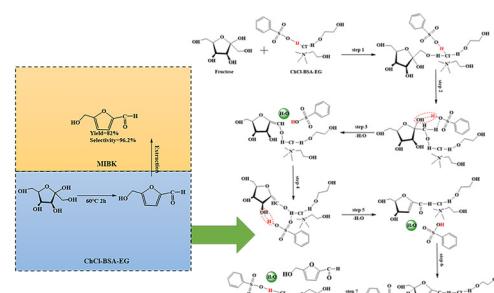
Rahul Binjhade, Raka Mondal and Sourav Mondal*



1587

Conversion of fructose to 5-hydroxymethylfurfural in a ternary deep eutectic solvent-based biphasic system at mild temperature

Wei Qi, Yuqi Chen, Liangzhi Li, Xin Ju, Hongwei Chen and Lishi Yan*



PAPERS

1596


Ag-doped Ni/SiO₂ catalysts for the synthesis of aromatic amines from aromatic phenol

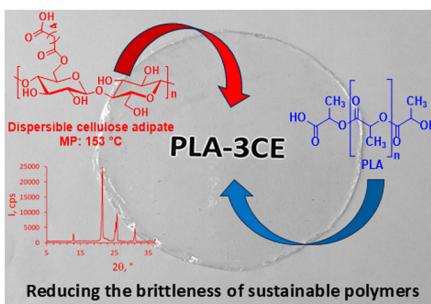
Kun Li, Baicheng Feng, Meng Guo, Rong Qu and Yan Jin*

1606


Simultaneous enzymatic esterification and ester extraction in Pickering emulsions for the recovery of butanol from fermentation broth

Yaoyao Feng, Pierre-Louis Carrette, Christine Dalmazzone and Etienne Joudier*

1615


New dispersible and low-melting cellulose ester produced with molten adipic acid as a solvent, reagent and catalyst, and its application to improve the mechanical properties of PLA

Mariafrancesca Baratta, Fabrizio Olivito,* Cataldo Simari, Wan Abd Al Qadr Imad Wan-Mohtar, Isabella Nicotera, Fiore Pasquale Nicoletta, Giovanni De Filpo and Giovanni Golemme

1627


Hydrogenation of nitriles to primary amines with a carbon-coated Ni/NiO@C catalyst under friendly conditions

Weidong Liu and Jianguo Liu*

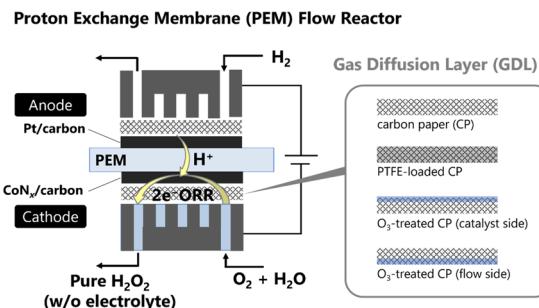


PAPERS

1638

Proton exchange membrane flow reactor with ozone-treated gas diffusion layers for production of pure H_2O_2 in aqueous and methanol solutions

Takuya Okazaki, Chihiro Tateishi, Kento Shibata, Kazuma Enomoto and Fumiaki Amano*

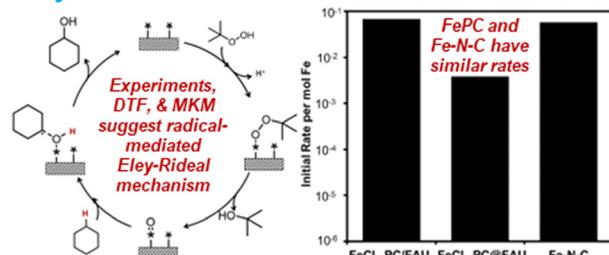


1647

Kinetic and mechanistic studies of cyclohexane oxidation with *tert*-butyl hydroperoxide over M-N4 catalysts

Ethan P. Iaia, Miles G. Miller, Ademola Soyemi, Martin G. Bakker, Tibor Szilvási and James W. Harris*

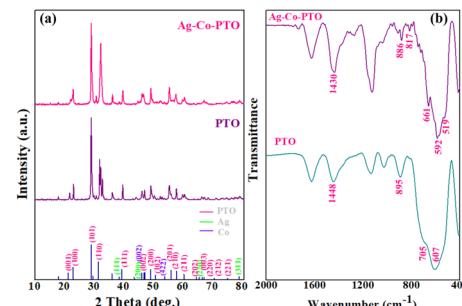
Cyclohexane Oxidation with TBHP at 303 K



1665

Lead titanate-modified perovskite with silver and cobalt as a superior photocatalyst toward the conversion of methylene blue

Amin Yousefvand, Mahdieh Ghobadifard* and Sajjad Mohebbi*



1676

The kinetics of aqueous lactose hydrolysis with sulfuric acid

Wenjia Wang, Owen J. Dziedzic, Claire R. Lesnjak, Zhuoqian Yu, James Miller, Xiaolei Shi, Jarryd R. Featherman, Scott A. Rankin and George W. Huber*

