

Reaction Chemistry & Engineering

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

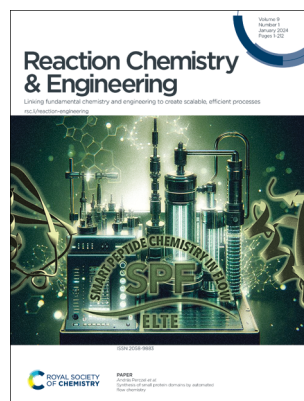
The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 2058-9883 CODEN RCEEBW 9(1) 1-212 (2024)



Cover
See Darren L. Riley *et al.*, pp. 45–57.
Image reproduced by permission of Darren Riley & Jenny-Lee Panayides from *React. Chem. Eng.*, 2024, 9, 45.



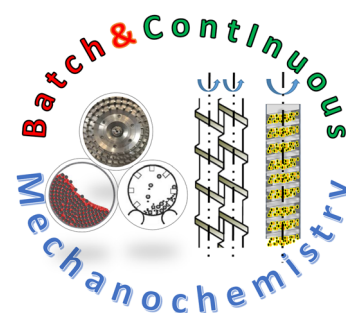
Inside cover
See András Perczel *et al.*, pp. 58–69.
Image reproduced by permission of András Perczel from *React. Chem. Eng.*, 2024, 9, 58.

REVIEW

10

Batch and continuous flow mechanochemical synthesis of organic compounds including APIs

Ranjit S. Atapalkar and Amol A. Kulkarni*



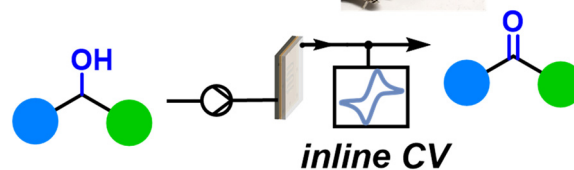
COMMUNICATIONS

26

Development of an open-source flow-through cyclic voltammetry cell for real-time inline reaction analytics

Eduardo Rial-Rodríguez, Jason D. Williams, Hans-Michael Eggenweiler, Thomas Fuchss, Alena Sommer, C. Oliver Kappe and David Cantillo*

- ✓ flow cyclic voltammetry
- ✓ reaction monitoring
- ✓ rapid analysis



Fuelling your energy research



Energy & Environmental Science

Agenda-setting research in energy science and technology

Chair of the Editorial Board

Jenny Nelson, Imperial College London, UK

Impact factor 2021: 39.714, median time to first decision
(peer reviewed articles only): 46 days*

rsc.li/ees



EES Catalysis

Exceptional research on energy and environmental catalysis

Editor-in-Chief

Shizhang Qiao, University of Adelaide, Australia

Median time to first decision (peer reviewed articles only): 24 days*

rsc.li/ees-catalysis



Sustainable Energy & Fuels

Driving the development of sustainable energy technologies
through cutting edge research

Editor-in-Chief

Garry Rumbles, National Renewable Energy Laboratory
and University of Colorado Boulder, USA

Impact factor 2021: 6.813, median time to first decision
(peer reviewed articles only): 28 days*

rsc.li/sustainable-energy



Energy Advances

Embracing research at the nexus of energy science and sustainability

Editor-in-Chief

Volker Presser, Leibniz Institute for New Materials, Germany

Median time to first decision (peer reviewed articles only): 32 days*

rsc.li/energy-advances

Submit your work today

rsc.li/energy

*Visit rsc.li/metrics-explainer for more information

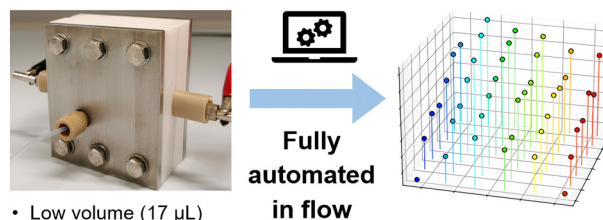
Registered charity number: 207890

COMMUNICATIONS

31

A low-volume flow electrochemical microreactor for rapid and automated process optimization

Eduardo Rial-Rodríguez, Johannes F. Wagner, Hans-Michael Eggenweiler, Thomas Fuchss, Alena Sommer, C. Oliver Kappe, Jason D. Williams* and David Cantillo*



Fully automated in flow

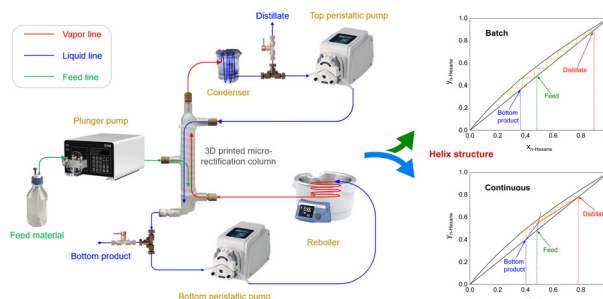
- Low volume (17 μ L)
- Fast reactions (7 s)
- Low reagent consumption

- ✓ 42 reactions per run
- ✓ 3 chemical examples

37

Design and evaluation of a microrectification platform using 3D printing

Yuting Zheng, Guandong Fang, Zhuoqin Fan, Haomiao Zhang,* Jingdai Wang and Yongrong Yang

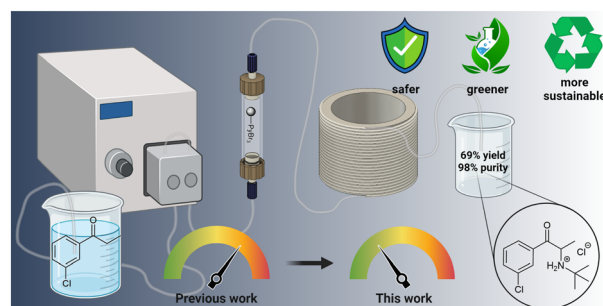


PAPERS

45

The synthesis of bupropion hydrochloride under greener and safer conditions utilizing flow technologies

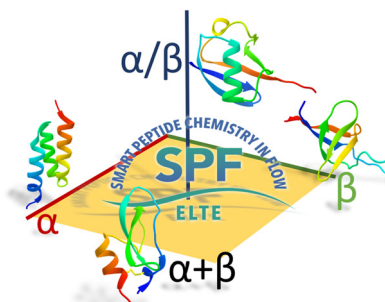
Lorinda T. van Wyk, Nicole C. Neyt, Jaimee Jugmohan, Jenny-Lee Panayides and Darren L. Riley*



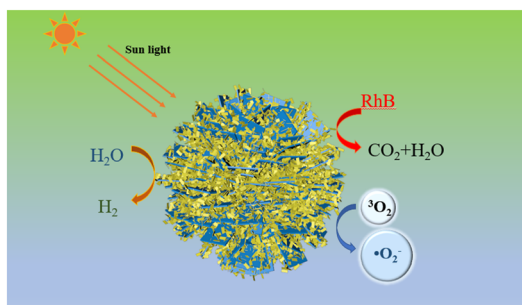
58

Synthesis of small protein domains by automated flow chemistry

Kristóf Ferentzi, Dóra Nagy-Fazekas, Viktor Farkas and András Perczel*



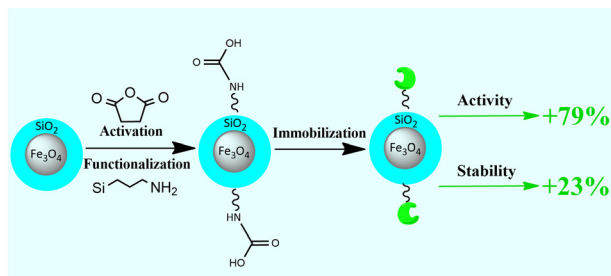
70



An investigation on a $\text{WO}_3/\text{MoO}_{3-x}$ heterojunction photocatalyst for excellent photocatalytic performance and enhanced molecular oxygen activation ability

Yuxuan Shao, Dan You,* Yuqi Wan, Qingrong Cheng* and Zhiquan Pan

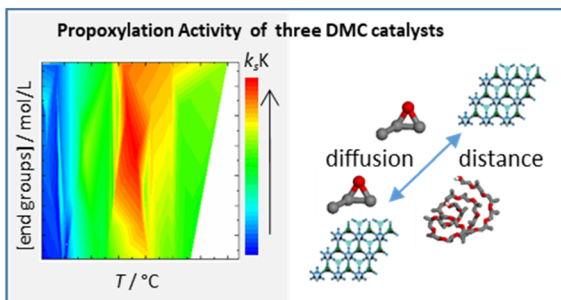
82



Improvement of DERA activity and stability in the synthesis of statin precursors by immobilization on magnetic nanoparticles

Dino Skendrović, Anera Švarc, Tonči Rezić, Andrey Chernev, Aleksandra Rađenović and Ana Vrsalović Presečki*

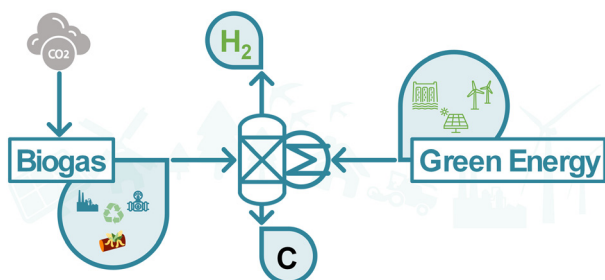
91



Analysis of propoxylation with zinc-cobalt double metal cyanide catalysts with different active surfaces and particle sizes

Sarah-Franziska Stahl and Gerrit A. Luinstra*

108



Pyrolysis of biogas for carbon capture and carbon dioxide-free production of hydrogen

Ahmet Çelik, Iadh Ben Othman, Heinz Müller, Patrick Lott* and Olaf Deutschmann



119

LearnCK: mass conserving neural network reduction of chemistry and species of microkinetic models

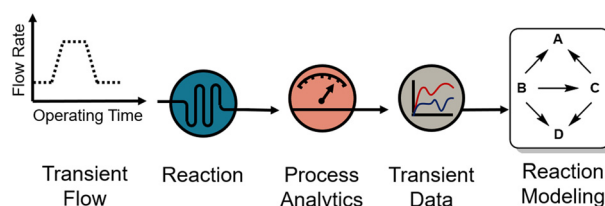
Sashank Kasiraju and Dionisios G. Vlachos*



132

Dynamic experiments in flow accelerate reaction network definition in a complex hydrogenation using catalytic static mixers

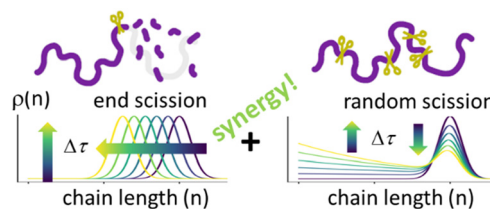
Stefano Martinuzzi, Markus Tranninger, Peter Sagmeister, Martin Horn, Jason D. Williams* and C. Oliver Kappe*



139

Quantifying synergy for mixed end-scission and random-scission catalysts in polymer upcycling

Ziqiu Chen, Emmanuel Ejiogu and Baron Peters*



Slowly, slowly, slowly getting faster...

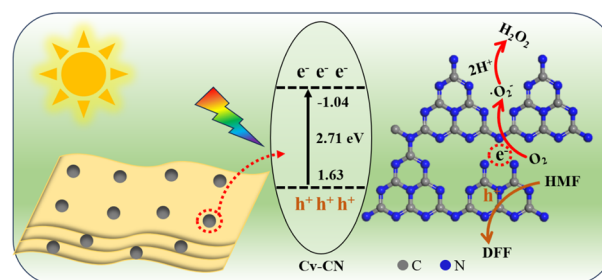
Faster, faster, it is so exciting...

- the Count, Sesame Street

148

Carbon-vacancy engineering approach to g-C₃N₄ for selective 5-hydroxymethylfurfural oxidation coupled with H₂O₂ production

Jingru Han, Mengzhen Song, Yingjie Li, Yue Yao, Shuxiang Lu and Xiaoyuan Liao*



CORRECTION

209

Correction: From traditional to greener alternatives: potential of plant resources as a biotransformation tool in organic synthesis

Vinay Kumar, Rituparna Saha, Satyaki Chatterjee* and Vivek Mishra*

