# **Reaction Chemistry & Engineering**

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

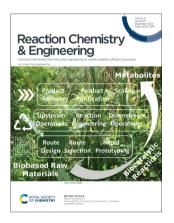
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ISSN 2058-9883 CODEN RCEEBW 8(9) 2099-2376 (2023)



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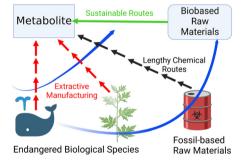
Inside cover See Roland Wohlgemuth, pp. 2109-2118. Image reproduced by permission of Roland Wohlgemuth from React. Chem. Eng., 2023, 8, 2109.

# **REVIEWS**

#### 2109

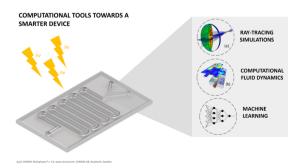
Route selection and reaction engineering for sustainable metabolite synthesis

Roland Wohlgemuth\*



Combining computational fluid dynamics, photon fate simulation and machine learning to optimize continuous-flow photocatalytic systems

Gabriela X. de Oliveira, Simon Kuhn, Humberto G. Riella, Cíntia Soares\* and Natan Padoin\*



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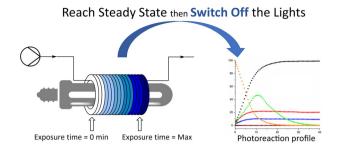
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#### 2134

# The switch-off method: rapid investigation of flow photochemical reactions

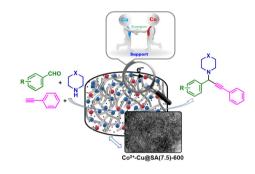
Dawid Drelinkiewicz, Stephen T. Alston, Thomas Durand and Richard J. Whitby\*



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# Tuning the catalytic performance of a Cu supported silica modified γ-Al<sub>2</sub>O<sub>3</sub> nanocatalyst via cobalt-doping for A<sup>3</sup>-coupling

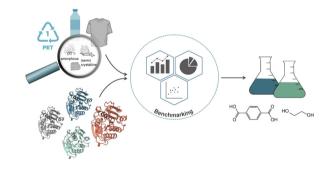
Manpreet Kaur, Shally Sharma, Anu Choudhary and Satya Paul\*



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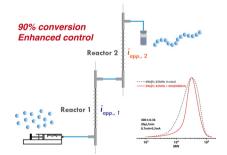
You get what you screen for: a benchmark analysis of leaf branch compost cutinase variants for polyethylene terephthalate (PET) degradation

Stefanie Fritzsche, Florentin Tischer, Wolfgang Peukert and Kathrin Castiglione\*

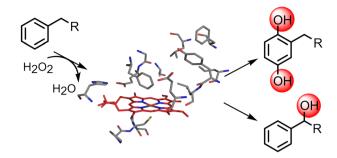


# Process intensification of continuous-flow seATRP by a sonicated multi-reactor setup

Sugi Zhang, Tanja Junkers and Simon Kuhn\*



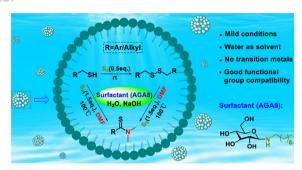
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# Aromatic hydroxylation of substituted benzenes by an unspecific peroxygenase from Aspergillus brasiliensis

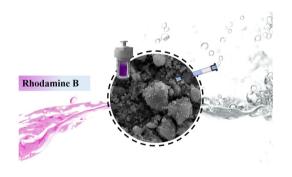
Fabian Schmitz, Katja Koschorreck, Frank Hollmann and Vlada B. Urlacher\*

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# An efficient and green procedure for transformation of thiols to disulfides and thioamides in AGA8 aqueous micelles

Hao Jin, Penghao Liu, Yuxiang Wang, Shuai Zhang, Qi Meng\* and Qiaoqiao Teng\*



# Efficient removal of organic dyestuff in water contamination over a MOF-derived Co-based adsorbent

Yuxi Yang, Yaqi Xue, Jing Li, Haihong Xia and Minghao Zhou\*

#### 2211 NBS (1.05 eq) acetonitrile visible light, spillway 25-30 °C 240 뺼 160 - 1×A 0.46 g • 1×A 0.92 g -▲- 2×A 2.3 g 80 140 200 ◆ 4×A 4.6 g $q_{emitted}$ / $\mu mol \cdot s^{-1}$

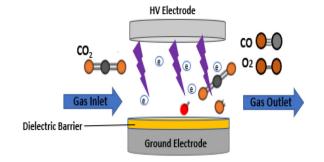
# Making photochemistry scalable – an operationally simple falling film looping photoreactor

Shibu Naskar, Daniel Kowalczyk, Susital Mal, Subrata Das,\* Debabrata Mandal, Prakash Kumar and Dirk Ziegenbalg\*

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# Effect of temperature on the CO<sub>2</sub> splitting rate in a **DBD** microreactor

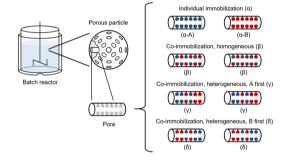
Deema Khunda, Sirui Li, Nikolay Cherkasov, Mohamed Z. M. Rishard, Alan L. Chaffee and Evgeny V. Rebrov\*



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# Mechanistic modeling, parametric study, and optimization of immobilization of enzymatic cascades in porous particles

Leandros Paschalidis, Sara Arana-Peña, Volker Sieber and Jakob Burger\*



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# Relationship between feeding strategies and nitrogen sources in platform chemical bio-based 2,3-butanediol production in fed-batch fermentation

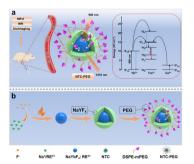
Daniel Tinôco,\* Rui de Paula Vieira de Castro, Douglas Teixeira, Francisco de Assis Beltrão Junior, Eduardo de Oliveira Júnior, Paulo Luiz de Andrade Coutinho and Denise Maria Guimarães Freire



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# Rare-earth doped hexagonal NaYbF<sub>4</sub> nanoprobes with size-controlled and NIR-II emission for multifunctional applications

Yu Min, Xin Ding, Bing Yu,\* Hailin Cong\* and Youqing Shen

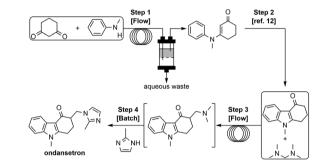


#### 2270 NMR verification & Benchtop Probe-based Reactor with calibration of PAT tools PAT tools **NMR** autosampler SM (NMR) Ξ PDT (NMR) SM (FTIR) PDT (FTIR) Time (h)

# From at-line to online NMR: coupling probe-based autosampler with benchtop NMR

Yining Ji,\* Zhihao Lin,\* Latevi Lawson,\* François Lévesque, David A. Foley, Robert Espina and Hector Robert

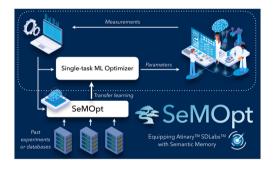
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# Multi-platform synthesis of ondansetron featuring process intensification in flow

Yoshio Hato and Timothy F. Jamison\*

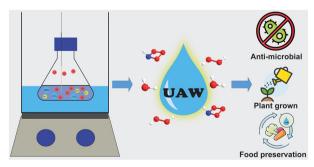
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Equipping data-driven experiment planning for Selfdriving Laboratories with semantic memory: case studies of transfer learning in chemical reaction optimization

Riley J. Hickman, Jurgis Ruža, Hermann Tribukait,\* Loïc M. Roch\* and Alberto García-Durán

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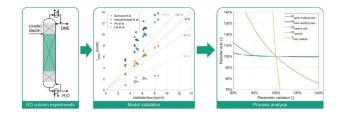
Optimizing dissolved gas composition in a doublebath-type sonoreactor for efficient production of ultrasonic-activated water with stable oxygen and nitrogen reactive species

Bao-Ngoc T. Le, Nguyen-Phuong Nguyen, Thanh-Linh H. Duong, Tri Nguyen, Tien-Cuong Hoang, Hong-Ha T. Nguyen, Dai-Viet N. Vo,\* Hoang-Duy P. Nguyen and Thuy-Phuong T. Pham\*

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Demonstration and experimental model validation of the DME synthesis by reactive distillation in a pilot-scale pressure column

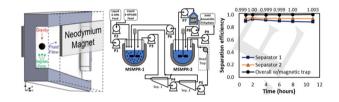
Malte Semmel, Innokentij Bogatykh, Benedikt Steinbach, Jörg Sauer, Jens-Uwe Repke and Ouda Salem\*



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Magnetic separation of immobilized biocatalyst enables continuous manufacturing with a solidsforming reaction

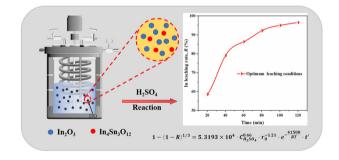
Colton E. Lagerman, Grant D. Marshall, Matthew A. McDonald, Patrick R. Harris, Martha A. Grover, Ronald W. Rousseau and Andreas S. Bommarius\*



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Efficient recovery of indium from waste indium tin oxide (ITO) targets by pressure leaching with sulfuric acid

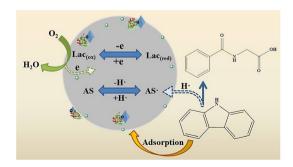
Qianyou Pu, Ba Zhang, Shiwei Zhou,\* Yonggang Wei, Bo Li and Hua Wang



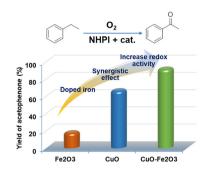
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Laccase-mediator co-immobilized doped-HKUST-1 cellulose composite beads and their application for the biodegradation of carbazole

Jia Juan, Xue Ping,\* Liu Xueping, Xu Chongrui, Gu Yaohua and Li Peng

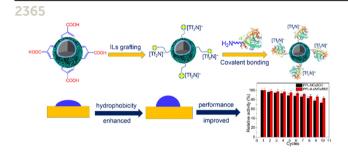


# 2353



Dioxygen-triggered oxidation of benzylic C-H bonds: insight on the synergistic effect of Cu-Fe bimetallic oxide

Aniruddha Singha, Anil Chandra Kothari, Rajaram Bal and Biswajit Chowdhury\*



Metal-organic framework-supported ionic liquids for lipase immobilization: design, characterization, and investigation of catalytic performance

Hongbo Suo, Qi Qi, Xusheng Dai, Xinyue Geng, Qi Li, Jie Yang, Guoyun Liu,\* Renmin Liu\* and Lili Xu\*