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## IN THIS ISSUE

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### Cover

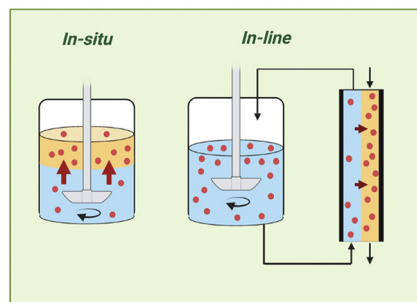
See Dagmar R. D'hooge *et al.*, pp. 2408–2422.  
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## REVIEW

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### Advances in *in situ* and *in-line* liquid–liquid extraction for bioprocess intensification

Patchara Chaichol and Nopphon Weeranoppanant\*

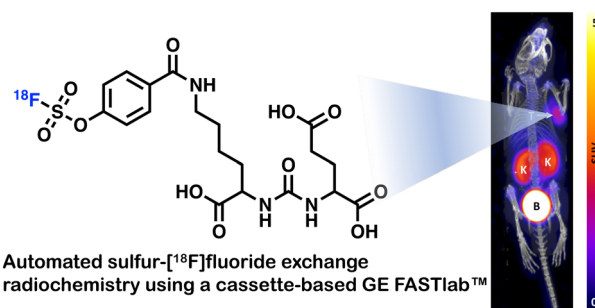


## COMMUNICATION

2403

### Automated sulfur- $^{18}\text{F}$ fluoride exchange radiolabelling of a prostate specific membrane antigen (PSMA) targeted ligand using the GE FASTlab™ cassette-based platform

Zixuan Yang, Chris Barnes, Juozas Domarkas, Joanna Koch-Paszkowski, John Wright, Ala Amgheib, Isaline Renard, Ruisi Fu, Stephen Archibald, Eric O. Aboagye\* and Louis Allott\*



Automated sulfur- $^{18}\text{F}$ fluoride exchange radiochemistry using a cassette-based GE FASTlab™

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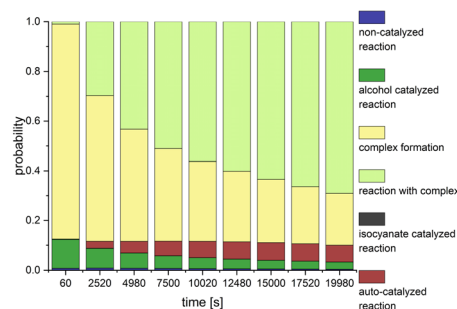


## PAPERS

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### A stepwise kinetic approach to quantify rate coefficients for reactant-, auto- and non-catalyzed urethanization of phenyl isocyanate and 1-butanol

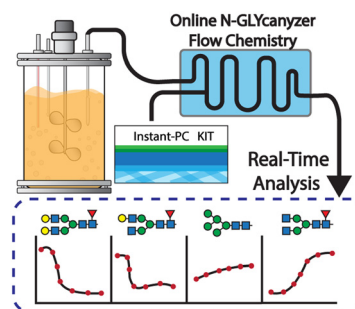
Lynn Trossaert, Mariya Edeleva,  
Paul H. M. Van Steenberge, Hendrik Kattner  
and Dagmar R. D'hooge\*



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### Automated instant labeling chemistry workflow for real-time monitoring of monoclonal antibody N-glycosylation

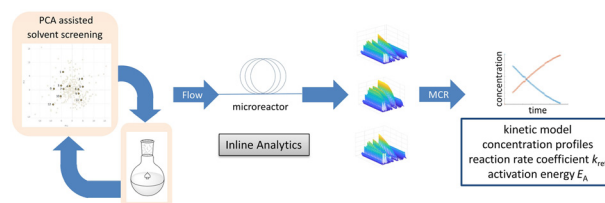
Aron Gyorgypal, Oscar G. Potter, Antash Chaturvedi,  
David N. Powers and Shishir P. S. Chundawat\*



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### Chemometric tools for kinetic investigations of a homogeneously catalysed Sonogashira cross-coupling reaction in flow

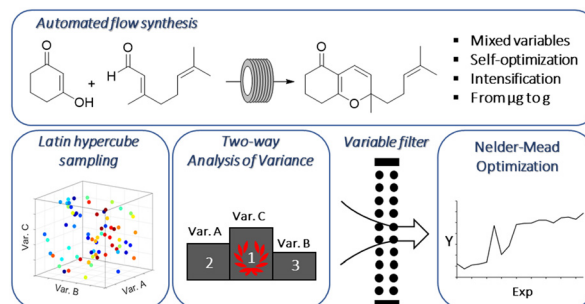
Lisa Schulz, Mathias Sawall, Norbert Kockmann  
and Thorsten Röder\*



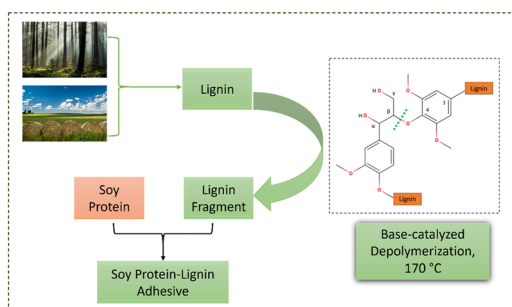
2446

### Ultra-fast and sustainable formal [3 + 3] cycloadditions enabled by mixed variable optimization on an automated micromole scale flow platform

Kouakou E. Konan, Aravind Senthil Vel, Abollé Abollé,  
Daniel Cortés-Borda\* and François-Xavier Felpin\*



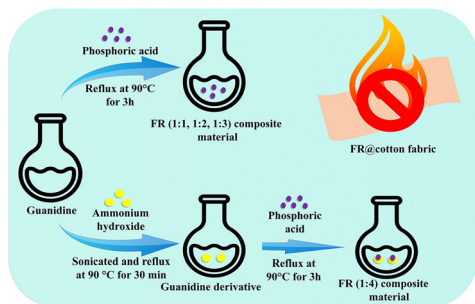
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### Lignin oligomers from mild base-catalyzed depolymerization for potential application in aqueous soy adhesive as phenolic blends

Changle Jiang, Jianli Hu,\* Chao Zhang, Gangarao Hota, Jingxin Wang and Novruz G. Akhmedov

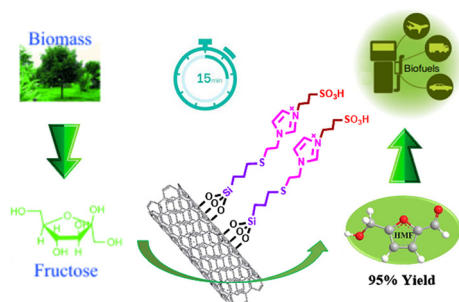
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### Development and demonstration of highly potent flame-retardant cotton fabric

Mahesh P. Bondarde, Kshama D. Lokhande, Madhuri A. Bhakare, Pratik S. Dhumal and Surajit Some\*

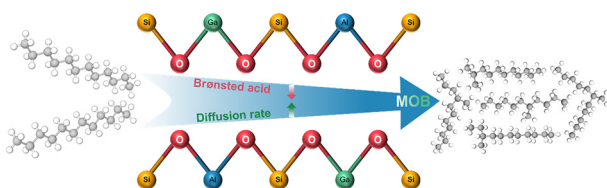
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### A multi-walled carbon nanotube-supported acidic ionic liquid catalyst for the conversion of biomass-derived saccharides to 5-hydroxymethylfurfural

Mahsa Niakan, Majid Masteri-Farahani,\* Farzad Seidi,\* Sabah Karimi and Hemayat Shekari

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### Synthesis of Ga-modified ZSM-48 with improved hydroisomerization performance of *n*-dodecane

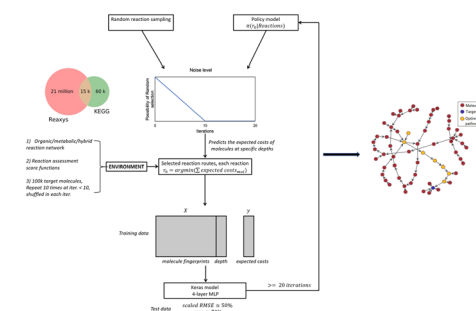
Wei Zhang, Haipeng Zhang, Mengxi Ma, Shuzhen Wang, Jiangnan Xiang, Yan Wang,\* Weijiong Dai, Binbin Fan, Jiajun Zheng and Ruifeng Li\*



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## Reinforcement learning optimization of reaction routes on the basis of large, hybrid organic chemistry–synthetic biological, reaction network data

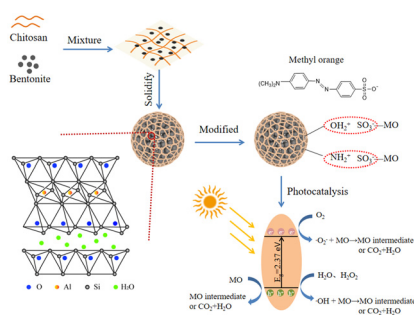
Chonghuan Zhang and Alexei A. Lapkin\*



2505

## Photocatalytic degradation of methyl orange by a diethylenetriamine modified chitosan/bentonite composite

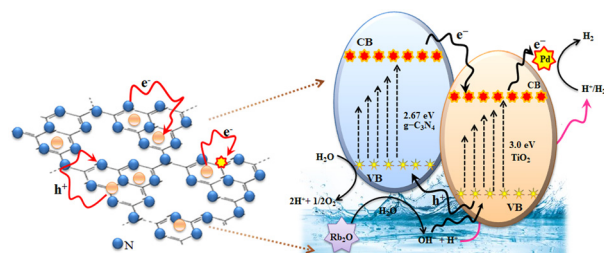
Xiangpeng Gao, Huiqing Yin, Mingyang Li, Lili Xin, Hao Zhang\* and Hongming Long



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## Surface sensitization of g-C<sub>3</sub>N<sub>4</sub>/TiO<sub>2</sub> via Pd/Rb<sub>2</sub>O co-catalysts: accelerating water splitting reaction for green fuel production in the absence of organic sacrificial agents

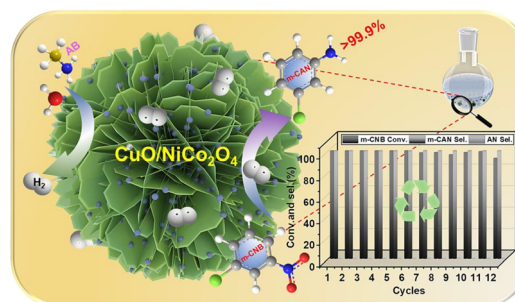
Kashaf Ul Sahar, Khezina Rafiq,\* Muhammad Zeeshan Abid, Ubaid ur Rehman, Abdul Rauf and Ejaz Hussain\*



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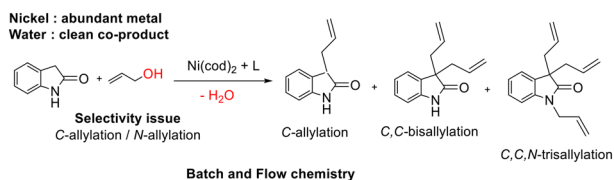
## Bicomponent CuO/NiCo<sub>2</sub>O<sub>4</sub> nanocomposites for the dehydrogenation of ammonia borane and the tandem hydrogenation of halogenated nitroaromatics

Xusheng Yang, Ping Li, Jiahao Wu, Le Zhou, Bin Xu,\* Xiaobin Zhang, Xiaoqiang Liu, Pingchuan Pan and Weidong Jiang\*





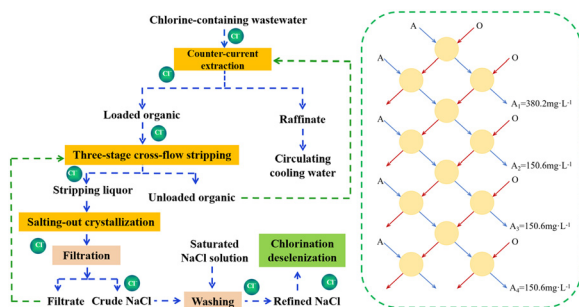
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## Sustainable and selective Ni-catalyzed allylation of 2-oxindoles and 2-coumaranones in batch and flow chemistry

Bouchaib Mouhsine, Anthony Saint Pol, Abdallah Karim, Maël Penhoat,\* Clément Dumont, Isabelle Suisse and Mathieu Sauthier\*

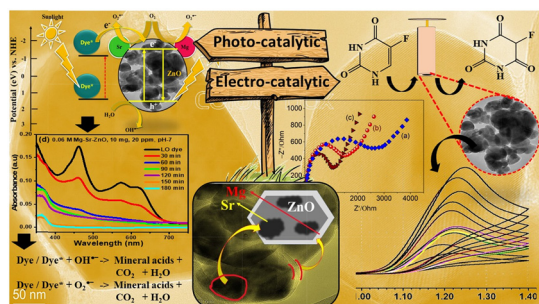
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## Purification of chlorine-containing copper smelting wastewater using extraction-stripping-salting out method

Yuan He, Yali Li, Shiwei Li, Shaohua Yin\* and Libo Zhang\*

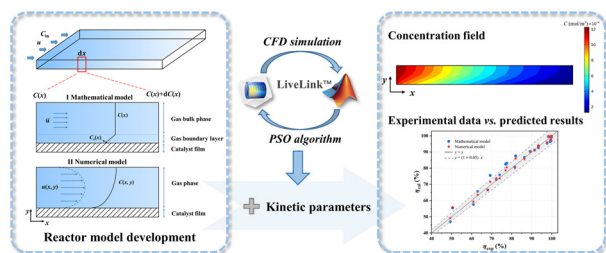
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## Dual catalytic activity of hexagonal Mg-Sr codoped ZnO nanocrystals for the degradation of an industrial levafix olive reactive dye under sunlight and biosensing applications

Sanakousar F. M., Vidyasagar C. C.,\* Shikandar D. B.,\* Mounesh, Viswanatha C. C., Gururaj Hosamani, Prakash K. and Manjunatha N. K.

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## A novel numerical method coupling CFD with PSO vs. a mathematical approach in the modeling of photocatalytic degradation of NO

Guoqing Zhang, Jiayou Liu, Liuhu Jia, Haiming Wang, Zhongchao Tan\* and Hesheng Yu\*

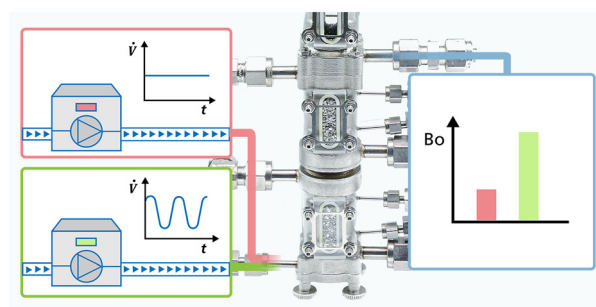


## PAPERS

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# Impact of residence time distributions in reacting magnesium packed beds on Grignard reagent formation – pump-induced flow behaviour in non-reacting magnesium beds (part 1)

Eva Deitmann, Michael Maskos, Gabriele Menges-Flanagan\* and Dirk Ziegenbalg\*

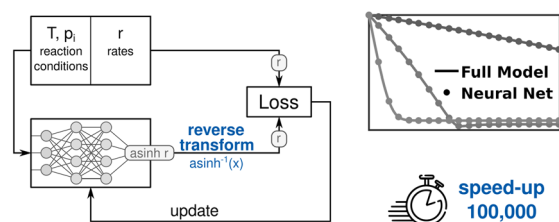


2620

# Efficient neural network models of chemical kinetics using a latent asinh rate transformation

Felix A. Döppel and Martin Votsmeier\*

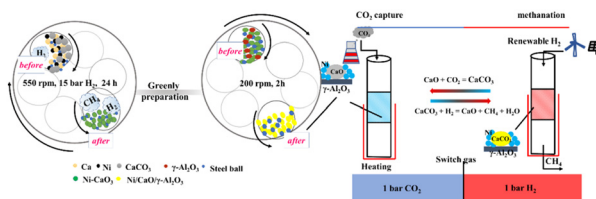
1. Train latent transformation model      2. Fast reactor simulations



2632

# Low-temperature conversion of CaO-captured CO<sub>2</sub> to CH<sub>4</sub> over a greenly prepared Ni/CaO/Al<sub>2</sub>O<sub>3</sub> composite under static pressure conditions

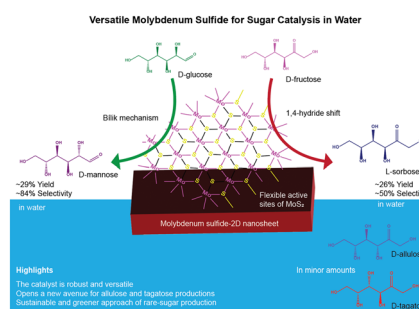
Han-Qing Chen, Zhan-Kuo Guo, Shu-Xiang Xiang, Hui-Lin Jiang and Yun-Lei Teng\*

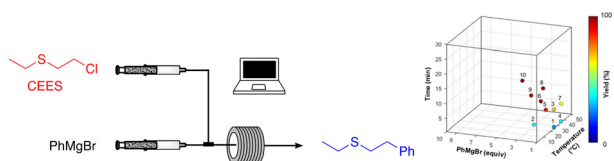


2641

# Molybdenum sulfide-2D nanosheets offering multiple metallic sites enable different sugar epimerization reactions to rare sugars in water

Senthil Murugan Arumugam, Sangeeta Mahala, Bhawana Devi, Sandeep Kumar, Ravi Kumar Kunchala and Sasikumar Elumalai\*





## Flow detoxification of a sulfur mustard simulant with organometallic compounds enabled by an optimization algorithm

Valmir Baptista da Silva, Sergui Mansour, Antonin Delaune, François-Xavier Felpin\* and Julien Legros\*

