

# Catalysis Science & Technology

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ISSN 2044-4761 CODEN CSTAGD 14(4) 779–1074 (2024)



### Cover

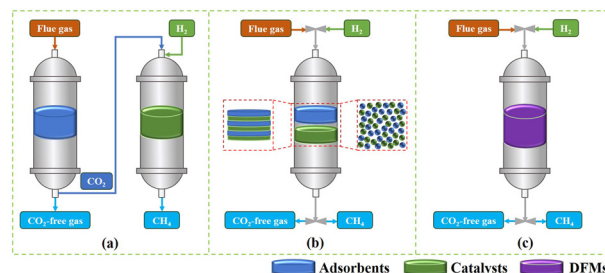
See Guochao Xu, Ye Ni *et al.*, pp. 835–839.  
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## REVIEWS

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### Integrated CO<sub>2</sub> capture and utilization: a review of the synergistic effects of dual function materials

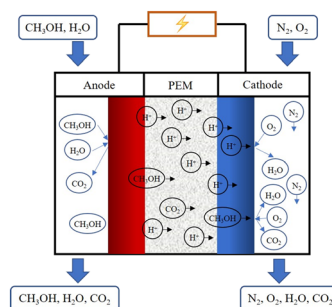
Yiran Zhang, Shu Zhao, Linjia Li, Jiaqi Feng, Ke Li, Zhen Huang and He Lin\*



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### Research developments in the application of electrospun nanofibers in direct methanol fuel cells

Shuyan Yu, Shuang Xu, Rashid Khan, Hongyu Zhao and Congju Li\*





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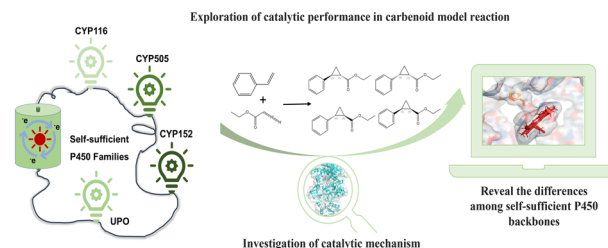


## COMMUNICATION

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### Modulating stereoselectivity and catalytic efficiency of carbenoid reactions catalysed by self-sufficient P450s

Binhao Wang, Cuiping You, Guochao Xu\* and Ye Ni\*

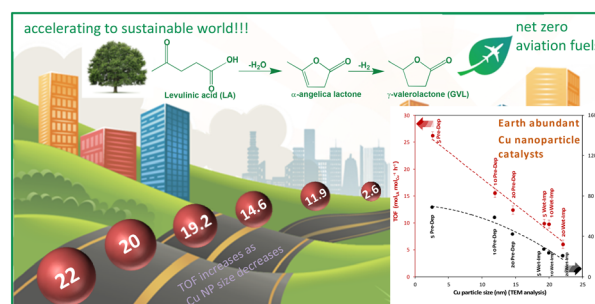


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### Structure sensitivity of Cu supported on manganese oxide catalysts in levulinic acid hydrogenation

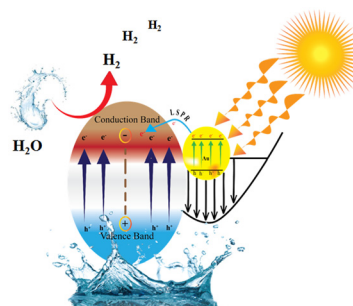
Nayan Jyoti Mazumdar, Praveen Kumar, Miryam Arredondo-Arechavala, Nancy Artioli and Haresh Manyar\*



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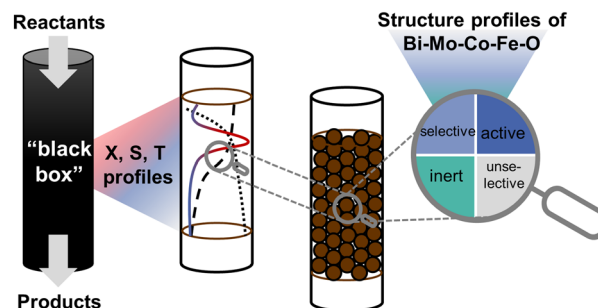
Muhammad Jalil, Khezina Rafiq,\*  
Muhammad Zeeshan Abid, Muhammad Rafay,  
Abdul Rauf, Rongchao Jin and Ejaz Hussain\*



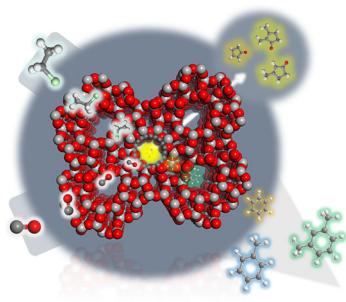
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### Exploring structure, temperature and activity correlations in the selective oxidation of lower olefins over Bi-Mo-Co-Fe-O catalysts by spatial reactor profile measurements

Linda Klag, Sebastian Weber, Raimund Horn,  
Thomas L. Sheppard and Jan-Dierk Grunwaldt\*



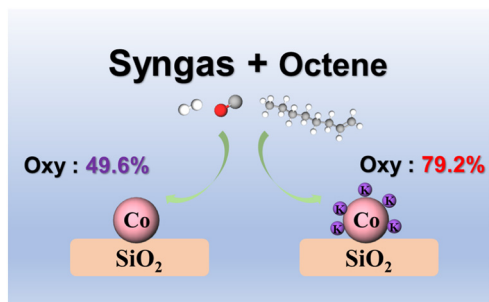
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### Highly efficient production of aromatics from $C_2H_5Cl$ coupling with CO over H-zeolites

Bin Li, Xudong Fang, Hongchao Liu,\* Zhiyang Chen, Mingguan Xie, Leilei Yang and Wenliang Zhu\*

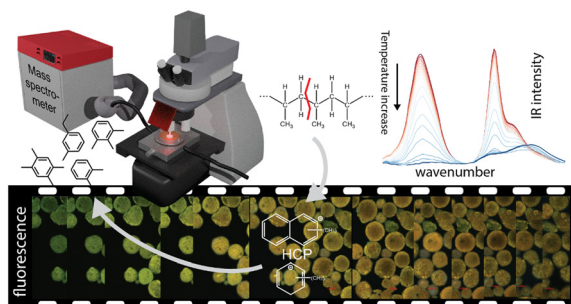
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### K-promoted cobalt-based catalysts for heterogeneous hydroformylation

Jingrui Ti, Kun Gong, Dinghao Cui, Yunlei An, Tiejun Lin\* and Liangshu Zhong\*

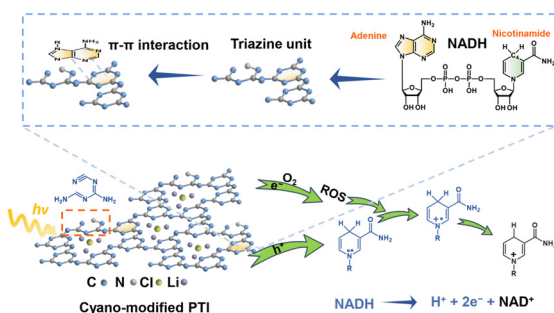
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Ina Vollmer, Michael J. F. Jenks, Sebastian Rejman, Florian Meirer, Andrei Gurinov, Marc Baldus and Bert M. Weckhuysen\*

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### Cyano-modified poly(triazine imide) with extended $\pi$ -conjugation for photocatalytic biological cofactor regeneration

Jianhua Liu, Jiashu Li, Fangshu Xing\* and Jian Liu\*

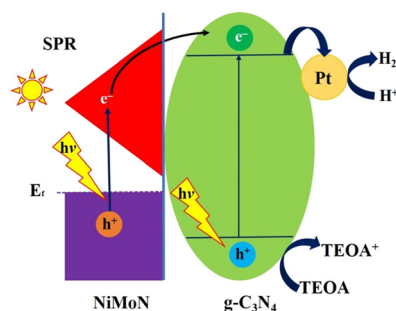




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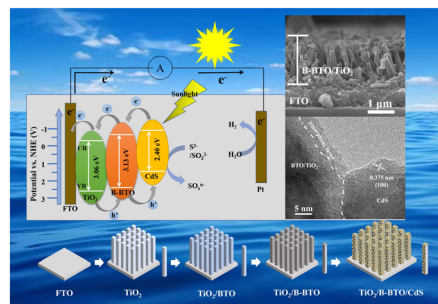
Ikram Ullah, Sadia Habib, Xiao-Jie Lu, Jing-Han Li, Shuai Chen, Aisha Habib and An-Wu Xu\*



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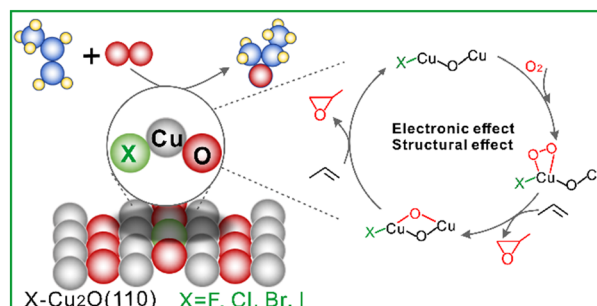
Ganghua Zhang,\* Zhibo Chen, Xiao Li, Zhanqiang Liu, Huichen Guo, Yanwei Huang, Yongzheng Fang\* and Jingshan Hou\*



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## Investigating the mechanism of propylene epoxidation over halogen (X = F, Cl, Br, I) modified Cu<sub>2</sub>O(110) surfaces: a theoretical study

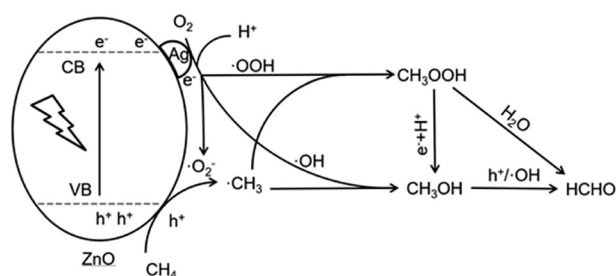
Lingyun Zhou,\* Zhu Wen, Leyuan Cui, Guangxu Yang, Yingchun Luo, Yadian Xie, Can Cui, Chunyan Li and Gang Fu\*



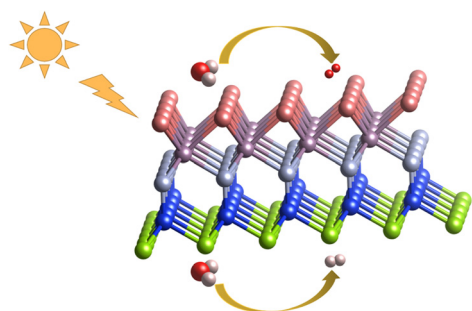
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## Efficient photocatalytic oxidation of CH<sub>4</sub> over Ag-modified ZnO nanorods

Chunlai Zhang, Yingdong Hao, Xingbo Wang, Deng Hu, Nannan Sun\* and Wei Wei\*



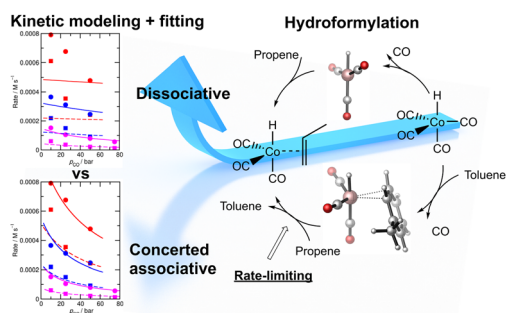
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Zhen Gao, Yao He\* and Kai Xiong

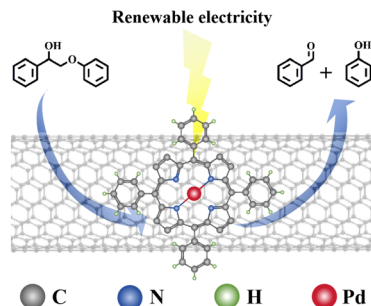
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### Kinetic modelling of cobalt-catalyzed propene hydroformylation: a combined *ab initio* and experimental fitting protocol

Luxuan Guo and Jeremy N. Harvey\*

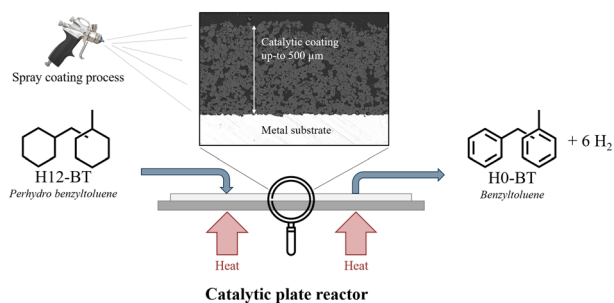
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### Molecular palladium catalyst enabling efficient electrochemical C–C bond cleavage within lignin model compounds

Peidong Ren, Lei Shi, Ziwang Kan, Jiaxiao Bai, Yunyi Liu, Shucheng Yang, Siqi Li\* and Song Liu\*

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### Highly durable spray-coated plate catalyst for the dehydrogenation of perhydro benzyltoluene

Phillip Nathrath, Yousuf Raed Ramzi, Markus Bierling, Simon Thiele, Peter Wasserscheid and Patrick Schühle\*

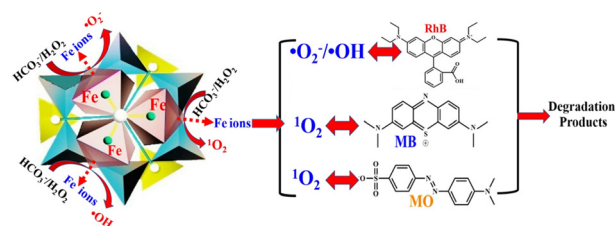


## PAPERS

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### Natural iron-rich tourmalines as effective catalysts for the heterogeneous and homogeneous activation of $\text{HCO}_3^-/\text{H}_2\text{O}_2$ to achieve the degradation of typical dyes

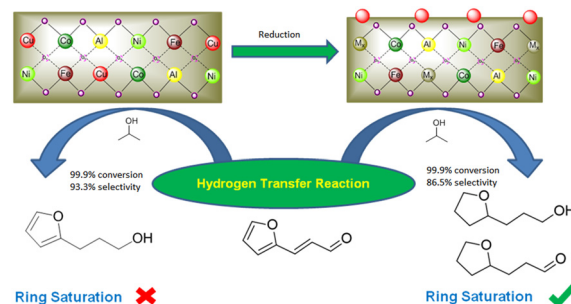
Huichao He, Jinyu Wen, Qiwen Chen, Hai Yu, Kun Liu, Tao Han, Xiaoyan Liu, Gaili Ke,\* Yutong Li\* and Huaming Yang\*



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### Selectivity-controllable hydrogen transfer reduction of $\alpha,\beta$ -unsaturated aldehydes over high-entropy catalysts

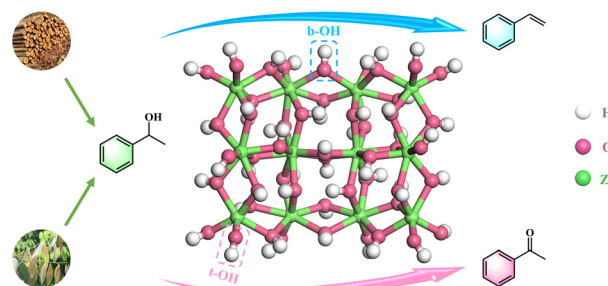
Ziling Liu, Jipeng Wang, Xiaoqian Gao, Yadong Bi,\* Chen Guo and Xinli Tong\*



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### Bridging and terminal hydroxyl groups of $\text{Zr}(\text{OH})_4$ as active sites for the ultraselective transformation of biomass-based alcohols

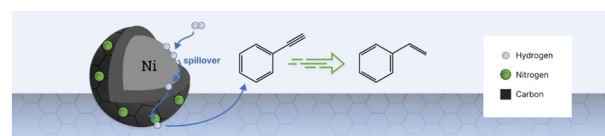
Xiaoqi Tang, Ganping Wang, Jiaheng Qin, Jie Song, Jiajun Tan, Linkun Dong, Weiwen Mao, Tong Li, Jian Fang\* and Yu Long\*



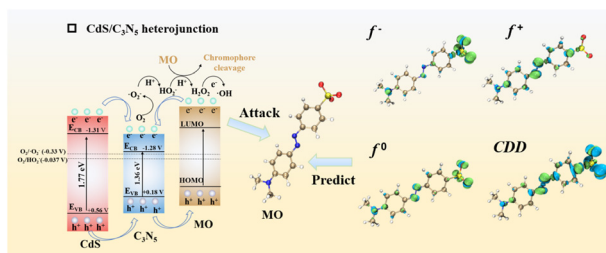
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### Hydrogen spillover on N-doped carbon coating improves the hydrogenation performance of nickel catalysts

Bruno Henrique Arpini, Jhonatan Luiz Fiorio, João Victor Ferreira da Costa, Jan-Ole Joswig and Liane Marcia Rossi\*



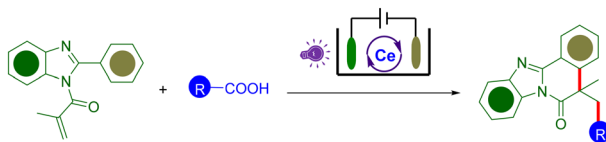
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Jian Wang, Derui Chen, Chenwei Ma, Yuanjing Du, Huinan Che\* and Yanhui Ao

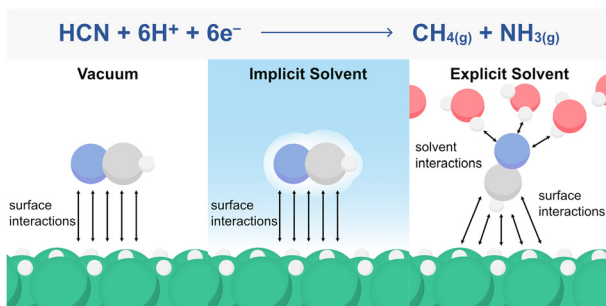
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### Electrophotoredox cerium-catalyzed decarboxylative radical cyclization cascade for the synthesis of alkylated benzimidazo-fused isoquinolinones

Meng Wang, Dehui Wang, Kun Xu\* and Chengchu Zeng\*

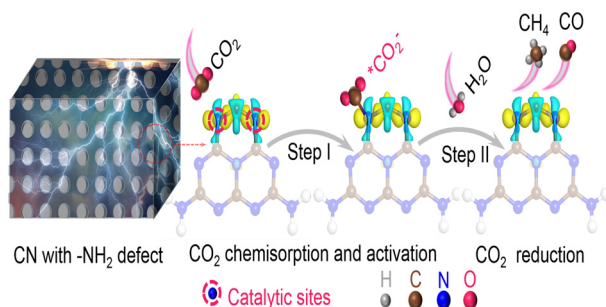
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### Solvation effects in the electrochemical reduction of hydrogen cyanide for ambient ammonia production on a Ni cathode

Kevin Brennan, Graeme W. Watson and Max Garcia-Melchor\*

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### CO<sub>2</sub> chemisorption and activation on carbon nitride with less amino groups boost CO<sub>2</sub> photoreduction

Debin Zeng, Xiting Wang, Chunguang Kuai, Zhuo Jiang\* and Yuzheng Guo\*





# Hydrogen production from ethanol by steam reforming with recyclable NiCaO<sub>x</sub>/NaCl catalysts

Yongji Hu, Weiyi He and Yuesong Shen\*

