

# Catalysis Science & Technology

A multidisciplinary journal focussing on all fundamental science and technological aspects of catalysis

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See Tzu Hsuan Chiang and Yu-Si Chen, pp. 3505–3516.  
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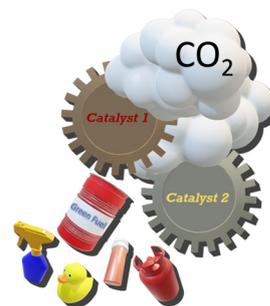
**Inside cover**  
See Zhen-Yu Tian *et al.*, pp. 3517–3526.  
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## MINI REVIEW

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### Bifunctional catalysts for the conversion of CO<sub>2</sub> into value-added products – distance as a design parameter for new catalysts

Maik Alexander Rudolph, Philipp Isbrücker and Reinhard Schomäcker\*

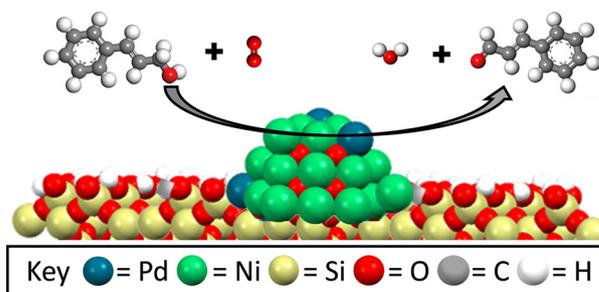


## COMMUNICATIONS

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### Isolated PdO sites on SiO<sub>2</sub>-supported NiO nanoparticles as active sites for allylic alcohol selective oxidation

Aleksandra Ziarko, Thomas J. A. Slater, Mark A. Isaacs, Lee J. Durndell and Christopher M. A. Parlett\*



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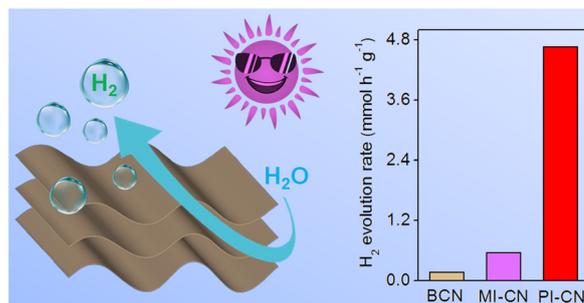


## COMMUNICATIONS

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### Facile implantation of imidazole-ring into graphitic carbon nitride for efficient photocatalytic hydrogen production

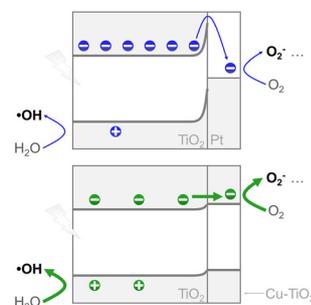
Siyuan He, Guanchao Wang and Zhongkui Zhao\*



3495

### Homogeneous interfacial electron transfer promotes photoinduced hole extraction for phenol mineralization

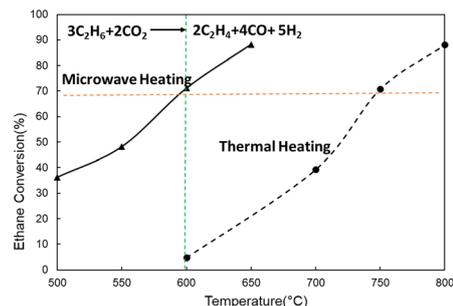
Yao Fang, Xuhui Wei, Haifeng Liu, Shugong Gao, Kun Jia, Junwei Wang\* and Jiazang Chen\*



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### Selectivity modulated oxidative dehydrogenation of ethane with CO<sub>2</sub> under microwave catalytic processing

Xiaoyan Wang, Yuxin Wang, Brandon Robinson, Ashley Caiola and Jianli Hu\*

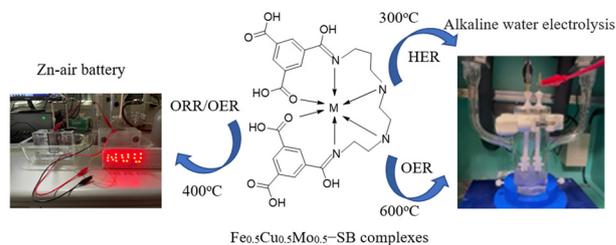


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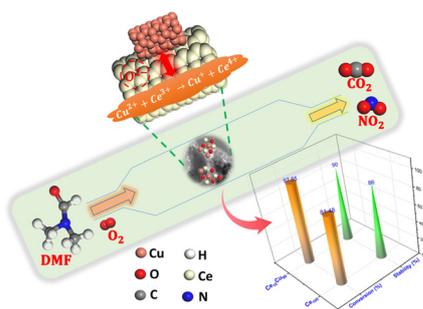
3505

### Trifunctional electrocatalysts of ternary iron-copper-molybdenum Schiff base complexes applied to Zn-air battery and alkaline water splitting

Tzu Hsuan Chiang\* and Yu-Si Chen



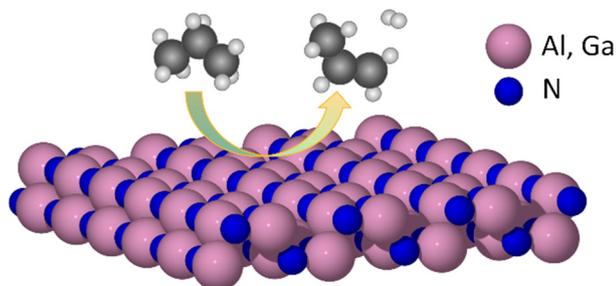
3517



### Low-temperature deep oxidation of *N,N*-dimethylformamide (DMF) over CeCu binary oxides

Cedric Karel Fonzeu Monguen, Samuel Daniel and Zhen-Yu Tian\*

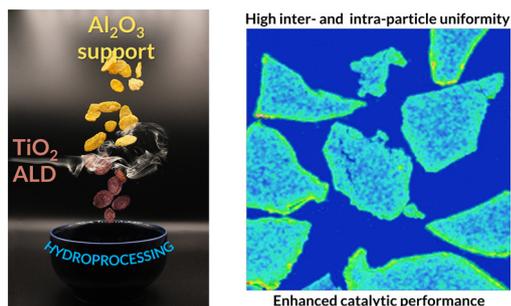
3527



### Multiscale modeling reveals aluminum nitride as an efficient propane dehydrogenation catalyst

Mona Abdelgaid, Evan V. Miu, Hyunguk Kwon, Minttu M. Kauppinen, Henrik Grönbeck and Giannis Mpourmpakis\*

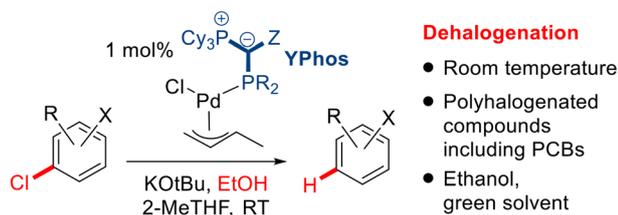
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### Synthesis of highly-uniform titania overcoats on a mesoporous alumina catalyst support by atomic layer deposition and their application in hydroprocessing

Jacob A. Moulijn,\* J. Ruud van Ommen, Aristeidis Goulas, David Valdesueiro, Jana Juan-Alcañiz, Kar-Ming Au-Yeung, Leo Woning and Jaap A. Bergwerff

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### Pd-catalysed hydrodehalogenation of aryl chlorides: a mild method for deuteration and detoxification

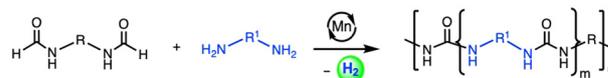
Angela Burhenn, Roberta Bavaro and Viktoria H. Gessner\*



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### Manganese catalysed dehydrogenative synthesis of polyureas from diformamide and diamines

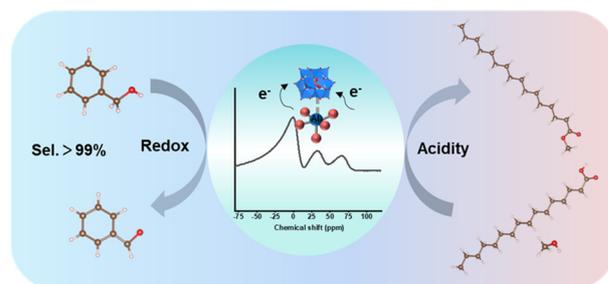
Angus McLuskie, Claire N. Brodie, Michele Tricarico, Chang Gao, Gavin Peters, Aaron B. Naden, C. Logan Mackay, Jin-Chong Tan\* and Amit Kumar\*



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### Pentacoordinated Al<sup>3+</sup> stabilized polyoxometalates for the efficient catalytic valorization of biomass-derived feedstocks

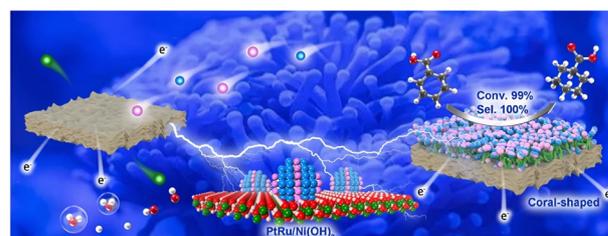
Lihua Wang, Shuangxiu Ma, Chunhong Chen, Bing Lu, Zhe Wang, Yong Wang and Shanjun Mao\*



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### Coral-shaped PtRu/Ni(OH)<sub>2</sub> electrocatalyst promotes selective hydrogenation of benzoic acid

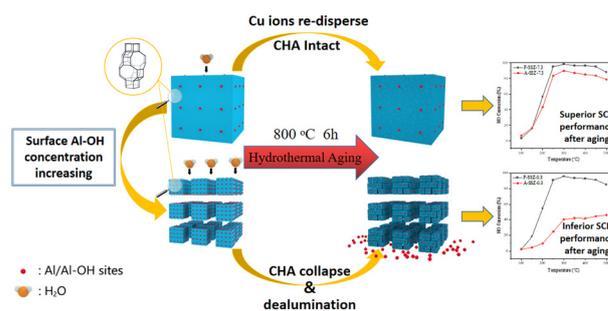
Menghui Liu, Chenhui Wang, Zifan Cao, Aiqun Kong, Yusheng Gao, Jinli Zhang, You Han, Wei Li\* and Yan Fu\*



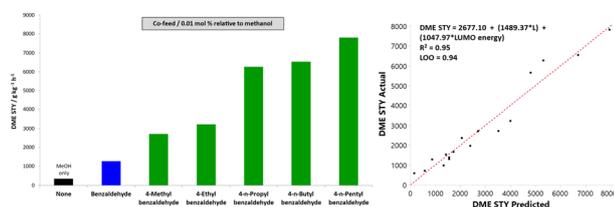
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### Revealing the effect of crystal size on the high-temperature hydrothermal stability of Cu/SSZ-13 NH<sub>3</sub>-SCR catalysts

Huabo Liu, Meiqing Shen, Chen Wang, Jun Wang, Jianqiang Wang and Gurong Shen\*



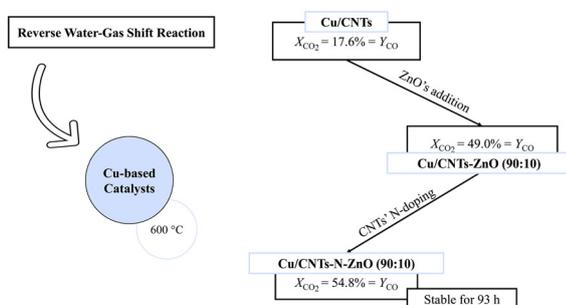
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### Aromatic aldehydes as tuneable and ppm level potent promoters for zeolite catalysed methanol dehydration to DME

Zhiqiang Yang, Benjamin J. Dennis-Smith,<sup>\*</sup> Corneliu Buda, Amie Easey, Fiona Jackson, Gregory A. Price, Neil Sainty, Xingzhi Tan, Zhuoran Xu and Glenn J. Sunley<sup>\*</sup>

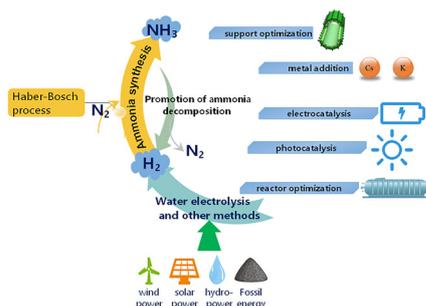
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### Enhancing the performance of Cu catalysts for the reverse water-gas shift reaction using N-doped CNT-ZnO composite as support

Ana Rita Querido, Liliana P. L. Gonçalves, Yury V. Kolen'ko, M. Fernando R. Pereira and O. Salomé G. P. Soares<sup>\*</sup>

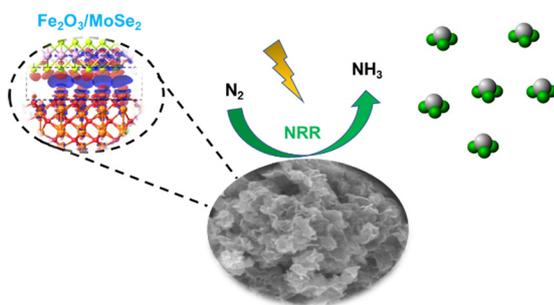
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### Promotion effects of different methods in CO<sub>x</sub>-free hydrogen production from ammonia decomposition

Daotong Liang, Chao Feng, Li Xu, Da Wang, Yuanshuai Liu, Xuebing Li<sup>\*</sup> and Zhong Wang<sup>\*</sup>

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### MOF-derived Fe<sub>2</sub>O<sub>3</sub>/MoSe<sub>2</sub> composites for promoted electrocatalytic nitrogen fixation

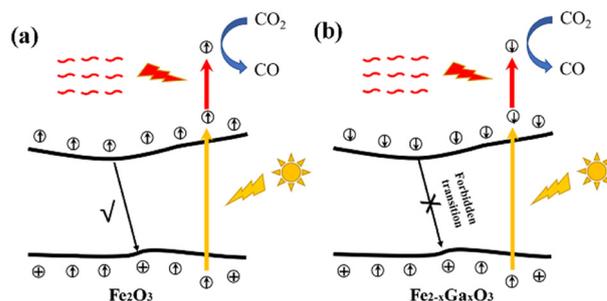
Liming Huang, Leiming Tao,<sup>\*</sup> Kui Pang, Shuying He, GuanHua Zhu, LinHai Duan, Chenglin Wen, Changlin Yu and Hongbing Ji<sup>\*</sup>



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### Enhanced thermal assisted photocatalysis reduction of carbon dioxide over a $\text{Fe}_{2-x}\text{Ga}_x\text{O}_3$ solid solution

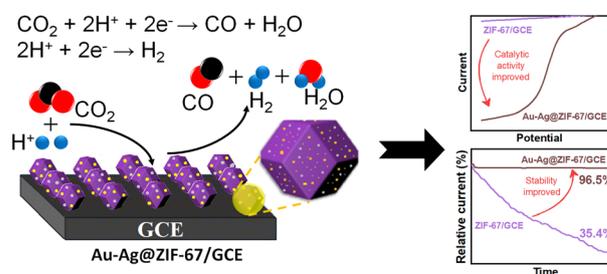
Lingtong Lin, Danning Xing, Caiyun Zhang, Yuanyuan Liu,\* Zeyan Wang, Peng Wang, Zhaoke Zheng, Hefeng Cheng, Ying Dai and Baibiao Huang\*



3645

### Efficient electrochemical $\text{CO}_2$ conversion by cobalt-based metal organic frameworks modified by bimetallic gold-silver nanostructures

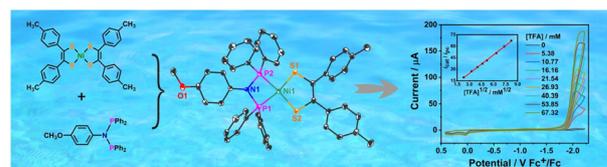
Mohammadali Beheshti, Mohsen Saeidi, MahsaSadat Adel-Rastkhiz, Shohreh Shahrestani, Ali Zarrabi, Jing Bai, Abdolreza Simchi\* and Samineh Akbarmolaie



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### Electrocatalytic hydrogen evolution by robust square planar nickel complexes in an $\text{S}_2\text{P}_2$ coordination environment

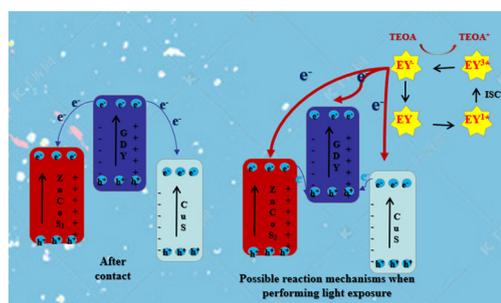
Luo Chen, Tao Li, Bin Xie,\* Chuan Lai,\* Run-Wu Ji, Jia-Yu He, Jia-Xi Cao, Meng-Nan Liu, Wei Li and Dong-Liang Zhang



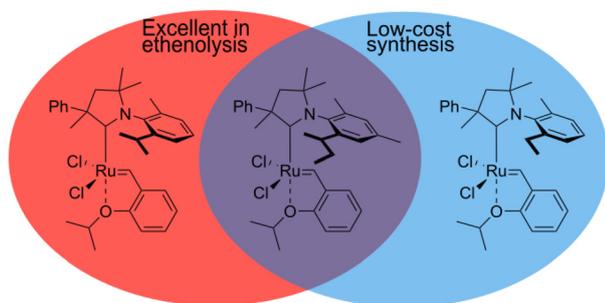
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### Graphdiyne ( $\text{C}_n\text{H}_{2n-2}$ ) coupled with ZnCo-MOF double S-scheme heterojunction forms an efficient electron transport layer and its characterization via *in situ* XPS

Linqing Zhang, Xuanpu Wang, Youji Li\* and Zhiliang Jin\*



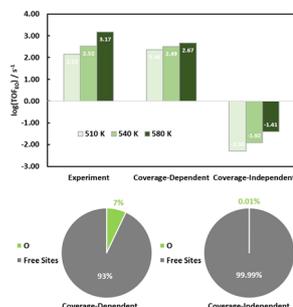
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### Aza-Claisen rearrangement as a key step in synthesis of specialised anilines used in the production of efficient ethenolysis catalysts

Adrian Sytniczuk, Filip Struzik, Vishal Purohit, Karol Grela and Anna Kajetanowicz\*

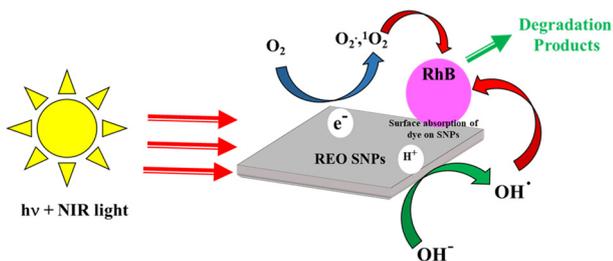
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### Insights into coverage-affected selective catalytic oxidation of ethylene on Ag(111) from comprehensive microkinetic analyses

Zhuozheng Wang, Wenbo Xie, Yarong Xu, Menglei Jia, Jiayan Xu and P. Hu\*

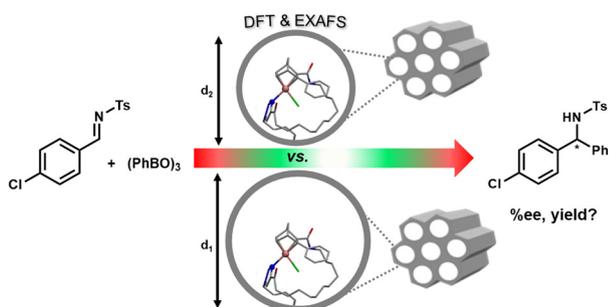
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### Synthesis of high yield, crystalline and thermally stable rare earth (Sm, Eu, Gd) oxide square nanoplates for near-infrared light activatable photocatalysis

Sanjeevan Rajagopal, Suresh Thangudu and Kuo Chu Hwang\*

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### Tethering chiral Rh diene complexes inside mesoporous solids: experimental and theoretical study of substituent, pore and linker effects on asymmetric catalysis

M. Kirchhof, K. Gugeler, A.-K. Beurer, F. R. Fischer, D. Batman, S. M. Bauch, S. Kolin, E. Nicholas, R. Schoch, C. Vogler, S. R. Kousik, A. Zens, B. Plietker, P. Atanasova, S. Naumann, M. Bauer, J. R. Bruckner, Y. Traa, J. Kästner and S. Laschat\*

