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

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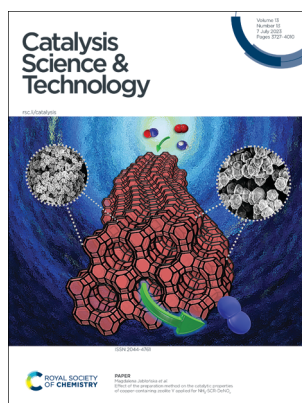
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## EDITORIAL

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Ina Vollmer,\* Haritz Sardon, George W. Huber and Zhibo Li

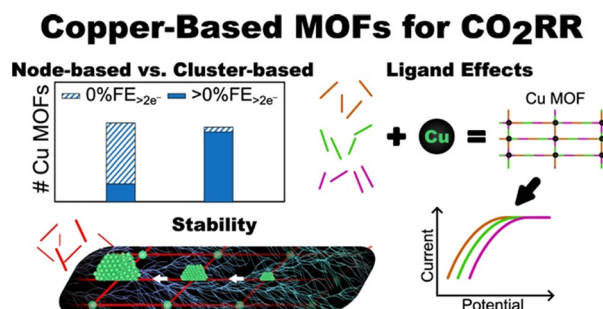


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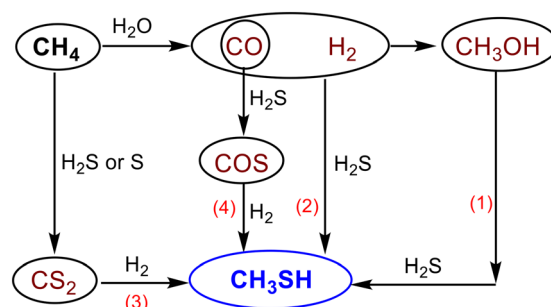


## MINI REVIEW

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## Methyl mercaptan production – catalysts and processes

Abdelilah Bayout, Claudia Cammarano, Izabel Medeiros Costa, Gleb Veryasov and Vasile Hulea\*

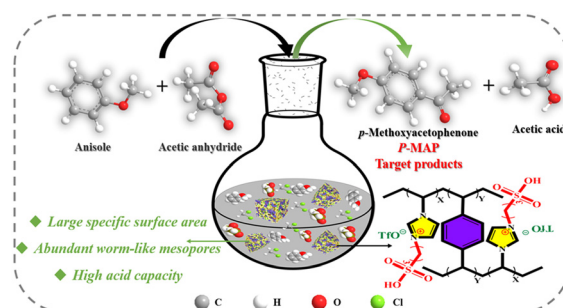


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## An efficient porous acidic ionic liquid polymer catalyst for Friedel–Crafts acylation reactions

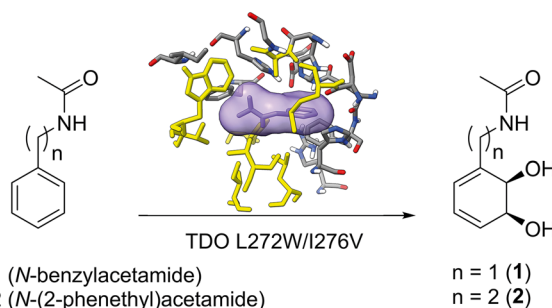
Junhu Zhao, Ming Li, Peng Yang, Xiangyang Jiang, Zhaojin Lv, Pier-Luc Tremblay\* and Tian Zhang\*



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## Production of novel Rieske dioxygenase metabolites enabled by enzyme engineering

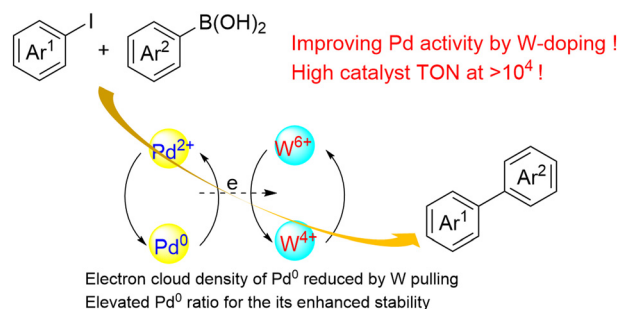
Elizabeth A. Osifalajo, Bailey N. Rutkowski, Louis R. Satterwhite, Phillip C. Betts, Angel K. Nkosi and Jordan T. Froese\*



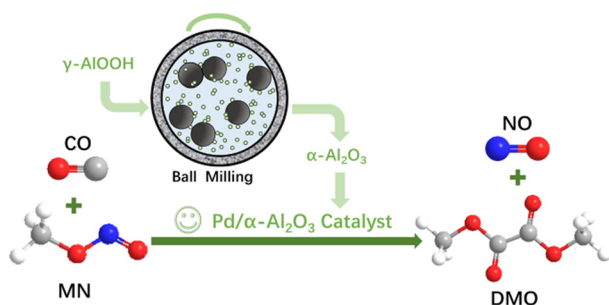
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## Tungsten-doping promoted catalytic activity of polyaniline-supported palladium for the Suzuki–Miyaura coupling reaction

Yiyang Zhang,\* Hong Sun, Yonghuai Yang, Haofei Li, Yaocheng Shi and Lei Yu\*



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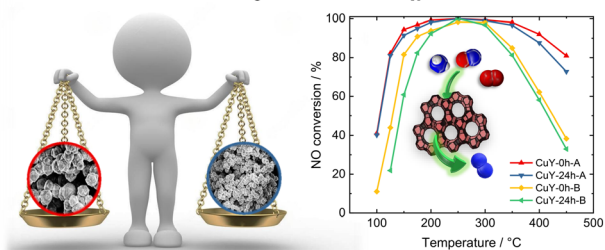


### Mechanochemical synthesis of a high-surface-area Pd/ $\alpha\text{-Al}_2\text{O}_3$ catalyst for CO oxidative coupling to dimethyl oxalate reaction

Lin Yang, Zhendong Pan, Donge Wang, Shuaiqi Wang, Xiaoping Wang, Huaijun Ma, Wei Qu and Zhijian Tian\*

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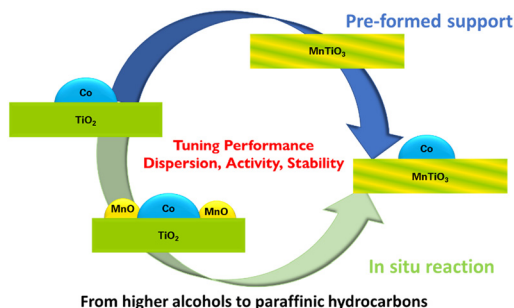
### $\text{NH}_3\text{-SCR-DeNO}_x$



### Effect of the preparation method on the catalytic properties of copper-containing zeolite Y applied for $\text{NH}_3\text{-SCR-DeNO}_x$

Rujito S. R. Suharbiansah, Muhammad Fernadi Lukman, Chiara Nannuzzi, Anna Wach, Kinga Góra-Marek, Michael Liebau, Ana Palčić, Andreas Pöpl, Gloria Berlier, Silvia Bordiga, Roger Gläser and Magdalena Jabtońska\*

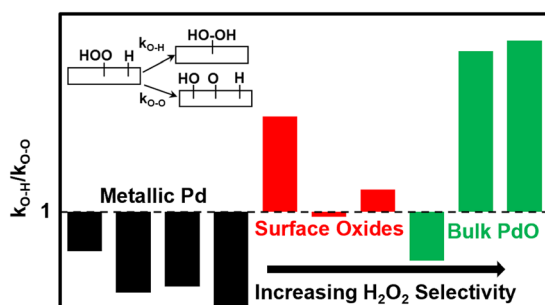
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### Controlling cobalt Fischer–Tropsch stability and selectivity through manganese titanate formation

James Paterson,\* David Brown, Sarah J. Haigh, Philip Landon, Qizhen Li, Matthew Lindley, Mark Peacock, Hendrik van Rensburg and Zhuoran Xu

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### Theoretical assessments of Pd–PdO phase transformation and its impacts on $\text{H}_2\text{O}_2$ synthesis and decomposition pathways

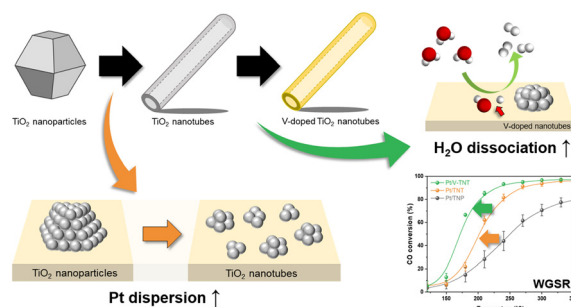
Manasi Vyas, Fernando Fajardo-Rojas, Diego A. Gómez-Gualdrón and Stephanie Kwon\*



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### Nanotubular Pt-loaded TiO<sub>2</sub> catalysts with vanadium-doping to enhance water-gas shift reaction activity

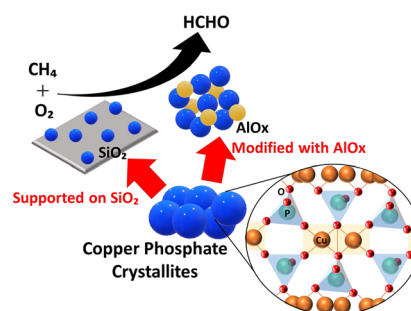
Jihyeon Song, Myeong Gon Jang, Kyung-Jong Noh, Yunkyung Kim and Jeong Woo Han\*



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### Active and durable copper phosphate catalysts modified with metal oxides for methane oxidation with oxygen into formaldehyde

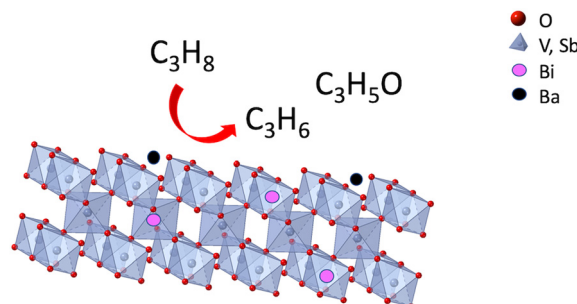
Mana Shimakawa and Sakae Takenaka\*



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### Dissecting the role of Bi and Ba in the catalytic efficiency of VSbBiBa/Al<sub>2</sub>O<sub>3</sub> catalysts in oxidative dehydrogenation and oxidation of propane

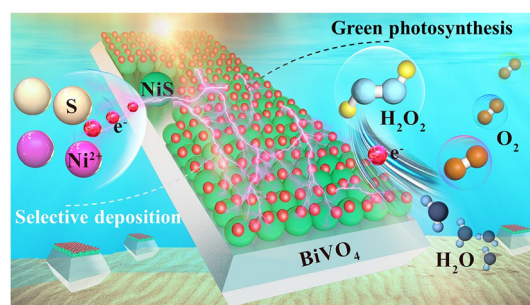
A. Bouzegane, P. P. Bargiela, M. Aouine, R. Checa, I. Popescu, I. C. Marcu, O. Peruch, V. Bellière-Baca and J. M. M. Millet\*



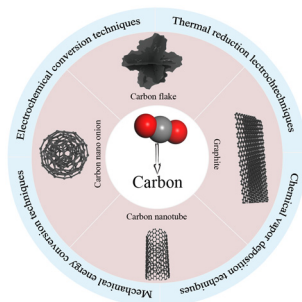
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### Accurate modulation of NiS cocatalysts on the photoelectron transfer sites of BiVO<sub>4</sub> for photocatalytic H<sub>2</sub>O<sub>2</sub> generation

Haiyang Shi, Shuaikang Li, Min Wang, Xinyu Yin, Junxian Huang, Wenjing Qi, Xuefei Wang,\* Ping Wang, Feng Chen and Huogen Yu\*



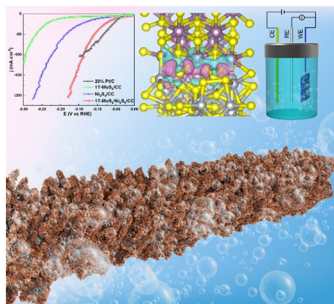
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### Conversion of carbon dioxide into solid carbon materials – a mini review

Xinlei Cheng, Minxian Wu,\* Jun Li, Wenchang Wang, Naotoshi Mitsuzaki and Zhidong Chen\*

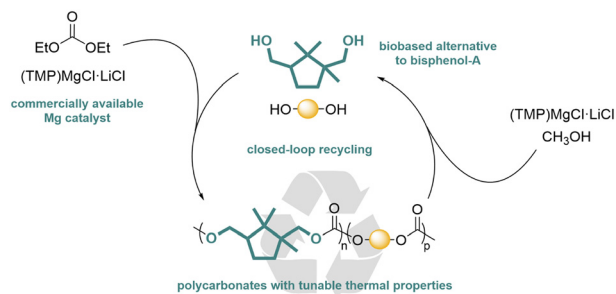
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### Constructing a 1T-MoS<sub>2</sub>/Ni<sub>3</sub>S<sub>4</sub> heterostructure to balance water dissociation and hydroxyl desorption for efficient hydrogen evolution

Lijuan Xiang, Xilin Liu, Shaonan Xu, Kaiwen Wang, Shisheng Yuan and Nan Li\*

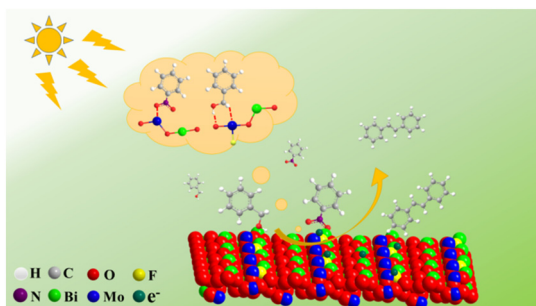
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### Efficient synthesis of camphor-based polycarbonates: a direct route to recyclable polymers

Bo Jiang and Christophe M. Thomas\*

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### Photocatalytic one-pot alkylation of nitrobenzene with benzyl alcohol for the precise synthesis of *N*-benzylideneaniline over F-doped Bi<sub>2</sub>MoO<sub>6</sub> nanosheets

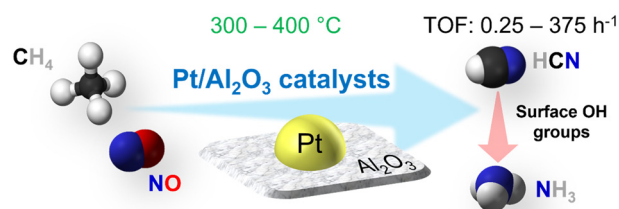
Guangcheng Zou, Rui Cao, Conghui Cui, Yuqiang Luo, Chen Huang, Xinwei Cui, Zhiwen Wang and Yujie Song\*



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### Methane activation with nitric oxide at low temperatures on supported Pt catalysts: effects of the support

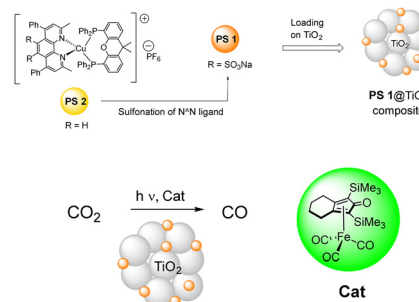
Nobuya Suganuma, I. Tyrone Ghampson, Hiroki Miura, Junichi Murakami, Kyoko K. Bando, Tetsuya Kodaira, Tatsuya Yamasaki, Atsushi Takagaki, Tatsumi Ishihara and Tetsuya Shishido\*



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### Photocatalytic CO<sub>2</sub> reduction with a TiO<sub>2</sub>-supported copper photosensitizer and an iron-based CO<sub>2</sub> reduction catalyst

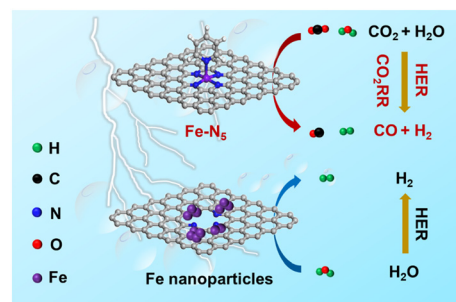
H. D. Huerta-Zerón, N. Rockstroh, M. Lang, A.-E. Surkus, V. Brüser, S. Lochbrunner, H. Junge\* and M. Beller\*



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### Fabricating penta-coordinated Fe single atoms for electrochemical CO<sub>2</sub> reduction to syngas

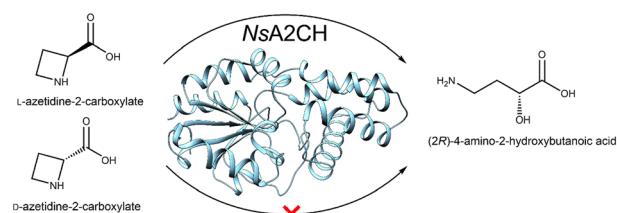
Linjie Wang, Xiaofei Lai, Yafeng Xu, Shaojuan Luo,\* Lu Wang,\* Kai Yan, Da Zhang, Sitong Feng and Yong Xu\*



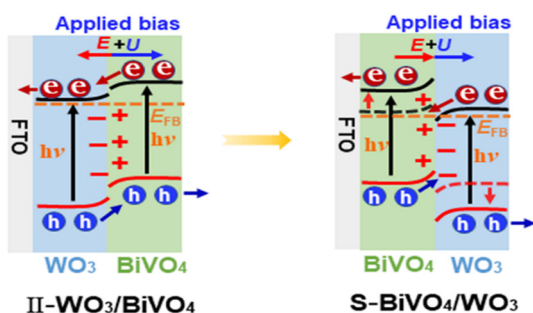
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### Enzymatic hydrolysis of L-azetidine-2-carboxylate ring opening

Xuexia Xu,\* Qin Yang, Lanteng Wang, Jie Zheng, Yang Gu, Xiwen Xing\* and Jiahai Zhou\*



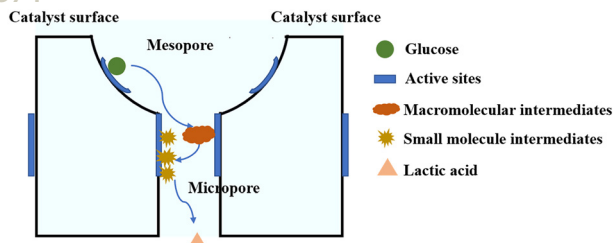
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### Interfacial electric field of BiVO<sub>4</sub>/WO<sub>3</sub> photoanode-induced S-scheme charge transfer for enhanced photoelectrochemical performance

Jian Zuo, Huili Guo, Shu Chen,\* Yong Pei\* and Canjun Liu

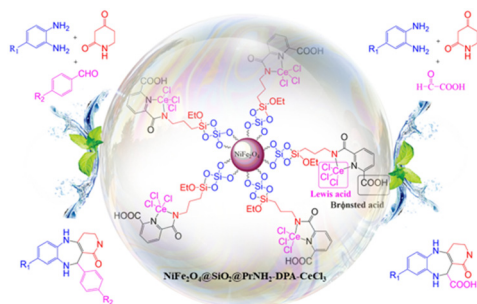
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### Synergistic effects of bimetals and hierarchical structures in Mg–Sn–Beta-H zeolites for lactic acid synthesis from biomass-derived carbohydrates

Meng Xia, Zheng Shen,\* Shaoze Xiao, Minyan Gu and Yalei Zhang\*

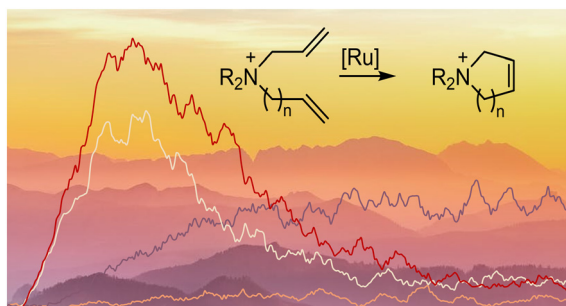
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### NiFe<sub>2</sub>O<sub>4</sub>@SiO<sub>2</sub>@PrNH<sub>2</sub>-DPA-CeCl<sub>3</sub>: a cerium-based magnetic nano dual-acid catalyst with high efficacy and recyclability for domino sequential synthesis of lactam ring-fused 1,5-benzodiazepines

Xiao Zhang, Fan Bai, Miaomiao Li, Huihui Ru and Lanzhi Wang\*

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### Competitive isomerization and catalyst decomposition during ring-closing metathesis

Charles Killeen, Jie Liu, Harmen S. Zijlstra, Florian Maass, James Piers, Reid Adams, Allen Oliver and J. Scott McIndoe\*

