

# EES Catalysis

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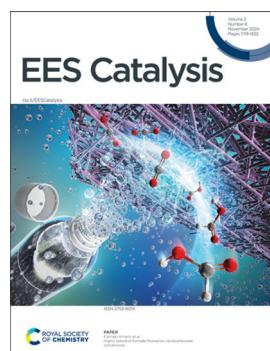
## IN THIS ISSUE

eISSN 2753-801X CODEN ECEACE 2(6) 1179–1322 (2024)



### Cover

See Javier Pérez-Ramírez et al., pp. 1263–1276.  
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### Inside cover

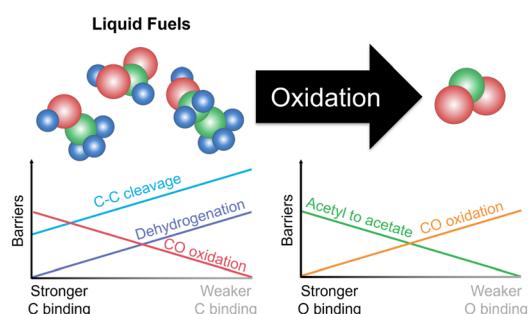
See Fumiaki Amano et al., pp. 1277–1284.  
Image reproduced by permission of Fumiaki Amano from *EES Catal.*, 2024, 2, 1277.

## REVIEWS

1186

### Uniting activity design principles of anode catalysts for direct liquid fuel cells

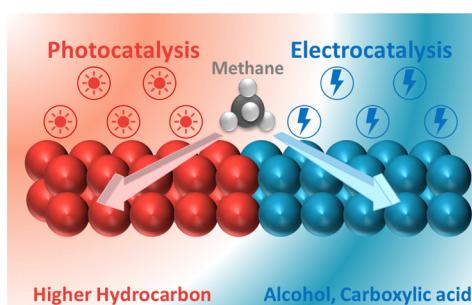
Daniel J. Zheng, Jiayu Peng,\* Kaylee McCormack, Hongbin Xu, Jin Soo Kang, Zhenshu Wang, Zhichu Ren, Ju Li, Yuriy Román-Leshkov\* and Yang Shao-Horn\*



1210

### Green energy driven methane conversion under mild conditions

Jiakang You, Yifan Bao, Yanzhao Zhang, Muxina Konarova, Zhiliang Wang\* and Lianzhou Wang\*



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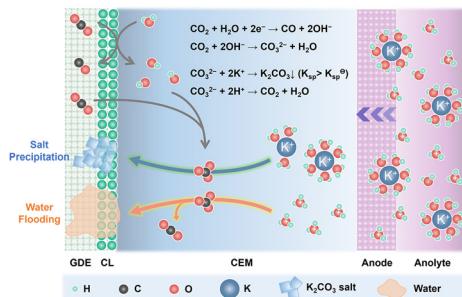
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## MINIREVIEWS

1228

## Salt precipitation and water flooding intrinsic to electrocatalytic $\text{CO}_2$ reduction in acidic membrane electrode assemblies: fundamentals and remedies

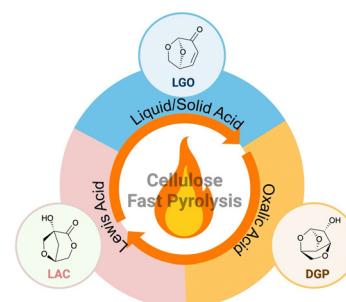
Qianqian Bai, Likun Xiong, Yongjia Zhang, Mutian Ma, Zhenyang Jiao, Fenglei Lyu,\* Zhao Deng and Yang Peng\*



1238

## Catalytic fast pyrolysis of cellulose to oxygenates: roles of homogeneous and heterogeneous catalysts

Yingchuan Zhang,\* Zijing Li, Tao Zhou and Guangri Jia\*

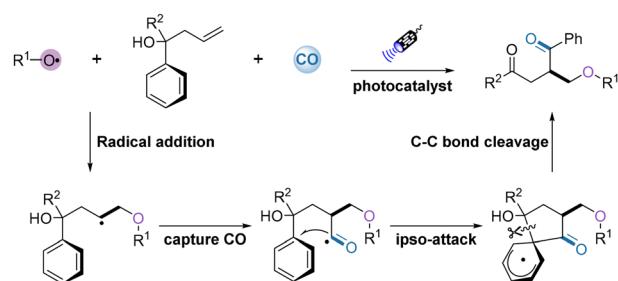


## COMMUNICATIONS

1247

## Visible light-promoted oxymercuration of unactivated alkenes

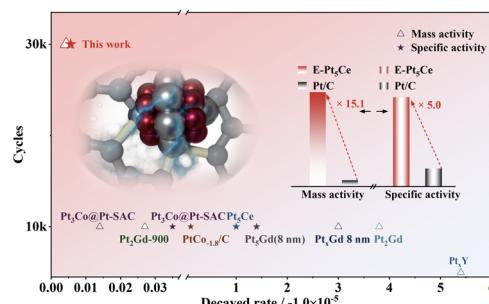
Hefei Yang, Yuanrui Wang, Le-Cheng Wang and Xiao-Feng Wu\*



1253

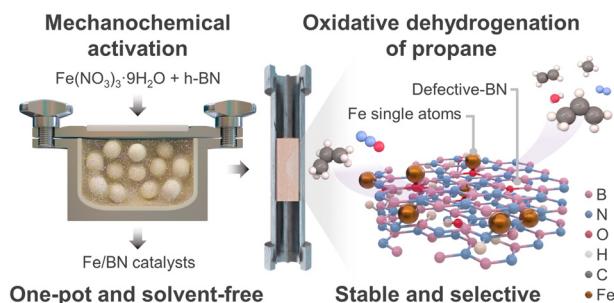
## Embedding the intermetallic $\text{Pt}_5\text{Ce}$ alloy in mesopores through Pt–C coordination layer interactions as a stable electrocatalyst for the oxygen reduction reaction

Nannan Jiang, Hao Wang, Huihui Jin, Xuwei Liu and Lunhui Guan\*



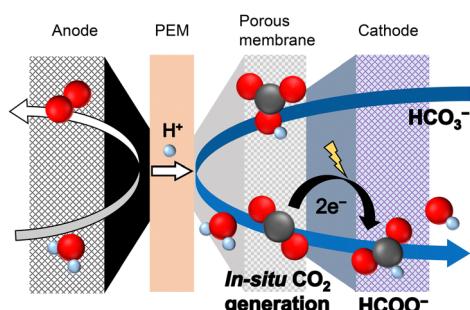
## PAPERS

1263

**Mechanochemically-derived iron atoms on defective boron nitride for stable propylene production**

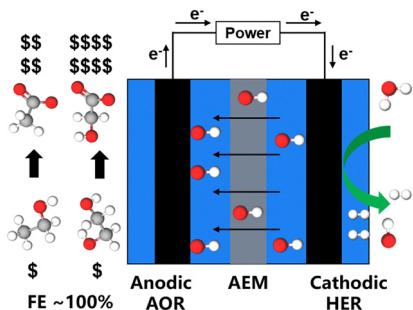
Gian Marco Beshara, Ivan Surin, Mikhail Agrachev, Henrik Eliasson, Tatiana Otroshchenko, Frank Krumeich, Rolf Erni, Evgenii V. Kondratenko and Javier Pérez-Ramírez\*

1277

**Highly selective formate formation via bicarbonate conversions**

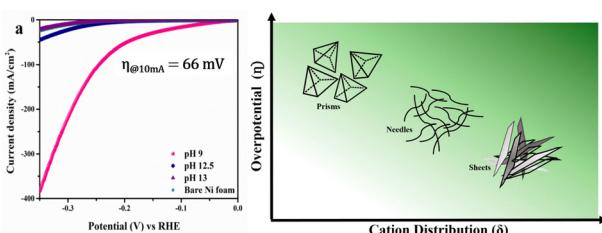
Kohta Nomoto, Takuya Okazaki, Kosuke Beppu, Tetsuya Shishido and Fumiaki Amano\*

1285

**Medium entropy alloy wavy nanowires as highly effective and selective alcohol oxidation reaction catalysts for energy-saving hydrogen production and alcohol upgrade**

Xiaoyang Fu, Chengzhang Wan, Huaxun Huyan, Sibo Wang, Ao Zhang, Jingxuan Zhou, Hongtu Zhang, Xun Zhao, Jun Chen, Xiaoqing Pan, Yu Huang\* and Xiangfeng Duan\*

1293

**Cation distribution: a descriptor for hydrogen evolution electrocatalysis on transition-metal spinels**

Aya K. Gomaa, Maram G. Zonkol, Ghada E. Khedr and Nageh K. Allam\*

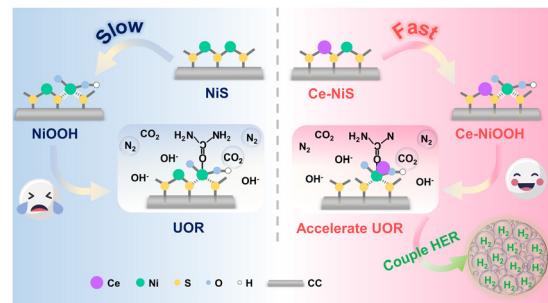


## PAPERS

1306

**Ce-induced NiS bifunctional catalyst transformation: enhancing urea oxidation coupled with hydrogen electrolysis**

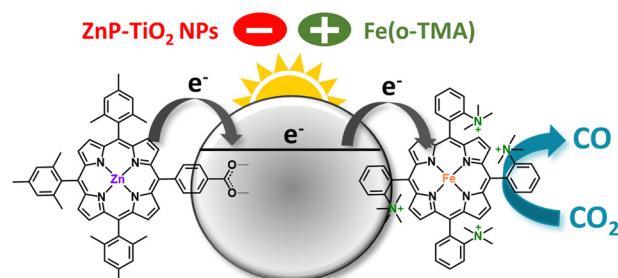
Yingzhen Zhang, Wei Zhang, Jianying Huang,\* Weilong Cai\* and Yuekun Lai\*



1314

**Efficient CO<sub>2</sub>-to-CO conversion in dye-sensitized photocatalytic systems enabled by electrostatically-driven catalyst binding**

Vasilis Nikolaou,\* Palas Baran Pati, Hélène Terrisse,\* Marc Robert\* and Fabrice Odobel\*



## CORRECTION

1320

**Correction: High photocatalytic yield in the non-oxidative coupling of methane using a Pd–TiO<sub>2</sub> nanomembrane gas flow-through reactor**

Victor Longo, Luana De Pasquale, Francesco Tavella, Mariam Barawi, Miguel Gomez-Mendoza, Víctor de la Peña O'Shea, Claudio Ampelli, Siglinda Perathoner, Gabriele Centi and Chiara Genovese\*

