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See Caroline E. Paul *et al.*, pp. 5530–5535.
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Inside cover
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MINI REVIEW

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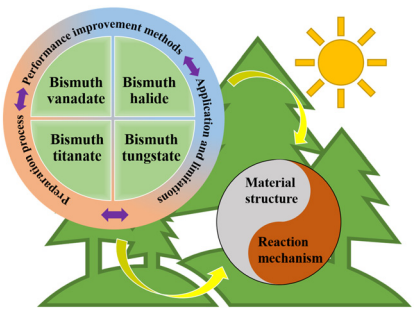
Review on the preparation and performance improvement methods of bismuth photocatalyst materials

Lei Chen, Bin Guan,* Jiangfeng Guo, Yujun Chen, Zeren Ma, Junyan Chen, Shunyu Yao, Chenyu Zhu, Hongtao Dang, Kaiyou Shu, Zelong Guo, Chao Yi, Kuangyi Shi, Yuan Li, Jingqiu Hu and Zhen Huang

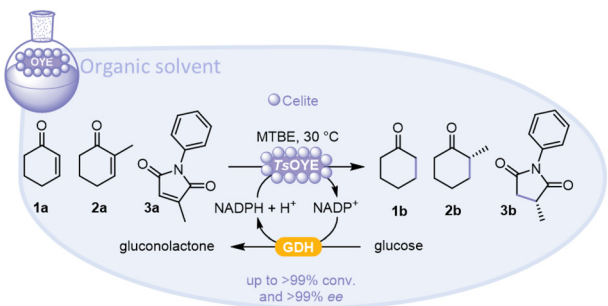


COMMUNICATIONS

5530

Biocatalytic reduction of alkenes in micro-aqueous organic solvent catalysed by an immobilised ene reductase

Rocio Villa, Claudia Ferrer-Carbonell and Caroline E. Paul*



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COMMUNICATIONS

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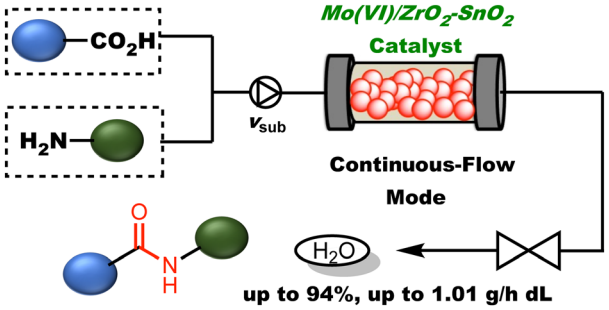
Continuous-flow dehydrative amidation between carboxylic acids and amines using modified mixed metal oxides as solid acid catalysts

Haruro Ishitani,* Kota Takeno, Masahiro Sasaya and Shū Kobayashi*



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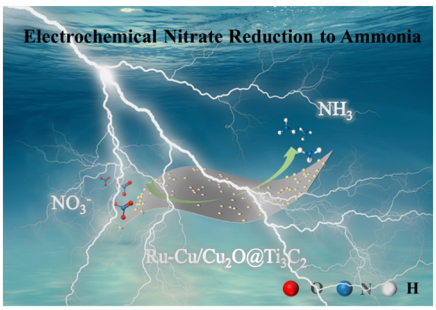
A two-dimensional MXene-supported CuRu catalyst for efficient electrochemical nitrate reduction to ammonia

Fang Zhao, Guangxin Li, Qianqian Hua, Jianghui Cao, Jiliang Song, Liguo Gao, Tingli Ma, Xuefeng Ren* and Anmin Liu*



PAPERS

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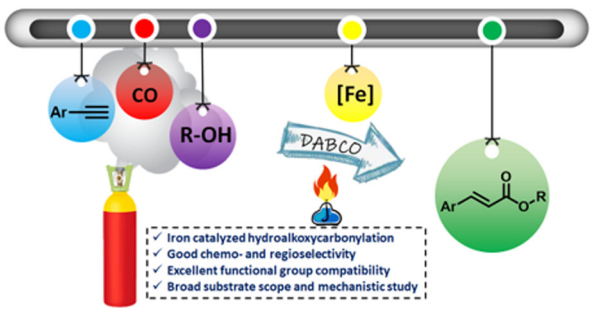
Iron-catalysed highly selective hydroalkoxycarbonylation of alkynes using CO as C1 source

Tanuja Tewari, Rohit Kumar and Samir H. Chikkali*



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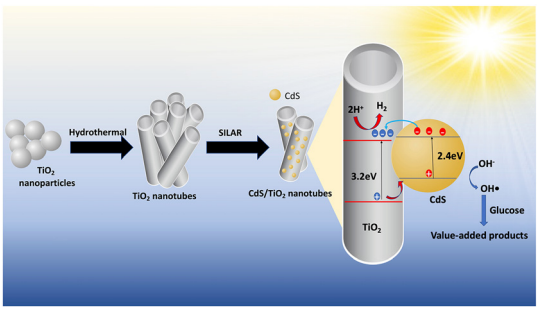
CdS/TiO_2 nanostructures synthesized *via* the SILAR method for enhanced photocatalytic glucose conversion and simultaneous hydrogen production under UV and simulated solar irradiation

Kamonchanok Roongraung, Alexey Cherevan, Dominik Eder and Surawut Chuangchote*



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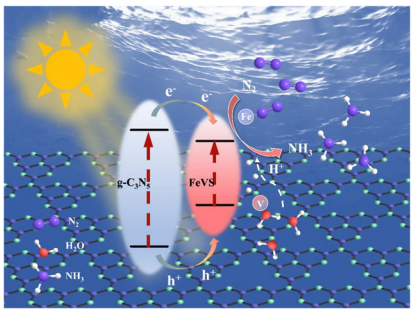

The construction of a vanadium-doped polysulfide iron bimetallic active center for enhanced photocatalytic nitrogen fixation

Wei Cai, Kang Li, Jianuan Wen, Zhicheng Zhang, Qin Zhong and Hongxia Qu*

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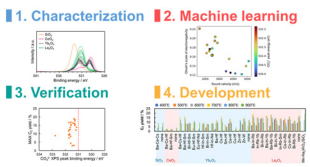

Indirect design of OCM catalysts through machine learning of catalyst surface oxygen species

Fumiya Nishino, Hiroshi Yoshida, Masato Machida, Shun Nishimura, Keisuke Takahashi* and Junya Ohyama*

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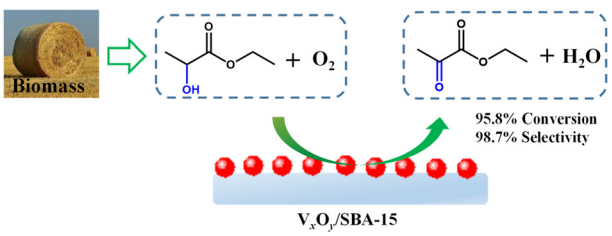

Highly efficient oxidation of ethyl lactate to ethyl pyruvate with molecular oxygen over V_xO_y/SBA-15 catalysts

Jing Xu, Zonghui Liu,* Yali Zhou, Rui Fu, Zhe Wen, Bing Yan and Bing Xue*

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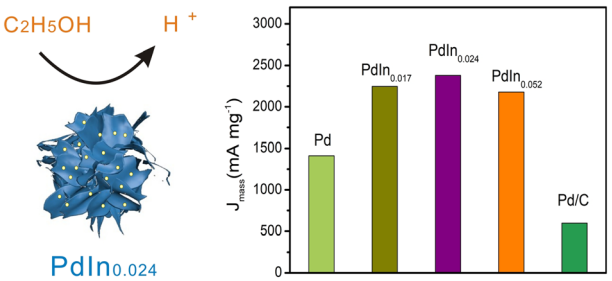

Indium-doped flower-shaped PdIn nanocatalysts for enhanced ethanol oxidation

Jingjing Dou, Xiang Li,* Bo Xi, Xiaoxuan Yang, Yaming Liu, Changqing Jin and Junjun Zhang

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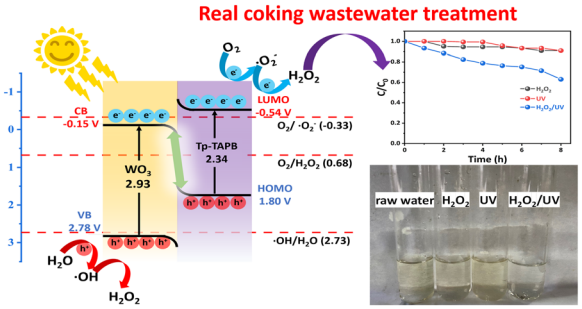
Direct Z-scheme WO_3/covalent organic framework (COF) heterostructure for enhanced photocatalytic hydrogen peroxide production in water

Yepeng Yang, Yuan Li, Xiaoqian Ma, Lanxin Xie, Die Lv, Liang Jiang, Jiao He, Daomei Chen and Jiaqiang Wang*



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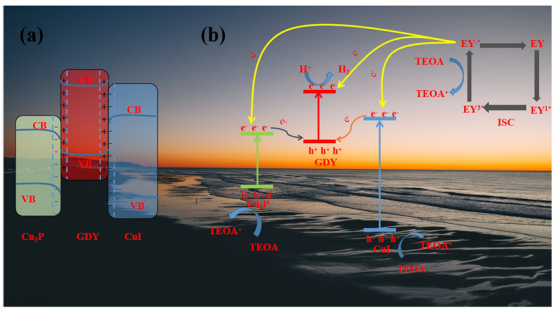
Phosphating core–shell graphdiyne/CuI/Cu_3P S-scheme heterojunction confirmed with *in situ* XPS characterization for efficient photocatalytic hydrogen production

Jie He, Xinyu Miao, Youlin Wu and Zhiliang Jin*



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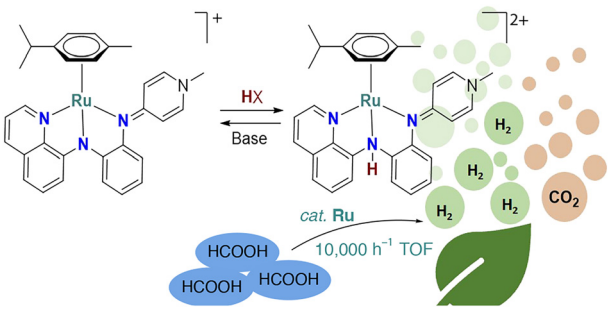
Efficient additive-free formic acid dehydrogenation with a NNN–ruthenium complex

Pascal Knörr, Nicolas Lentz and Martin Albrecht*



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Unlocking the potential of catalysts in thermochemical energy conversion processes

Avinash Alagumalai, Balaji Devarajan and Hua Song*

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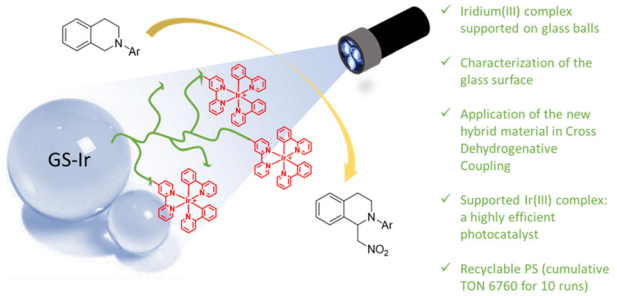

Recycling of brush polymer containing iridium photocatalyst supported on glass balls

Audrey Beillard, Julien A. L. Renault, Duc-Hahn Nguyen, Warren Lhuillier, Jean-Luc Renaud, Aurélie Vicente and Sylvain Gaillard*

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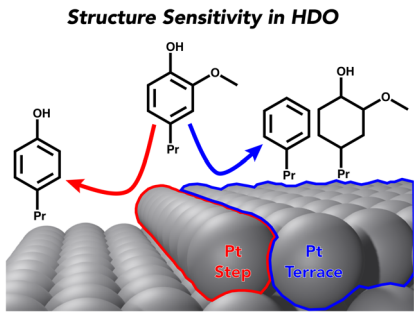

Structure sensitivity in Pt-catalyzed hydrodeoxygenation of multi-oxygenated lignol model compounds

Justin Marlowe, Peter C. Ford, Mahdi M. Abu-Omar* and Phillip Christopher*

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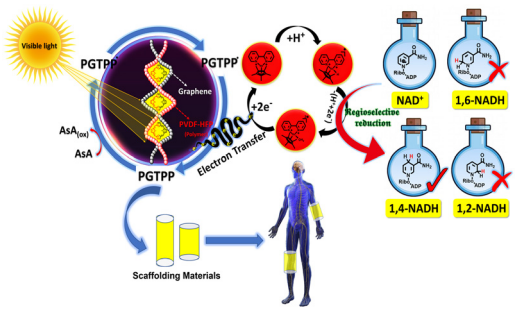

Unleashing the solar revolution: harnessing the power of an ultra-strong tensile strength PGTPP nanocomposite photocatalyst for artificial photosynthesis

Kuldeep Kumar, Rajesh Kumar Yadav,* Rajesh Kumar Verma,* Satyam Singh, Rehana Shahin, Rajat Singhal, Navneet Kumar Gupta, Chandani Singh, Dilip K. Dwivedi and Jin-OoK Baeg*

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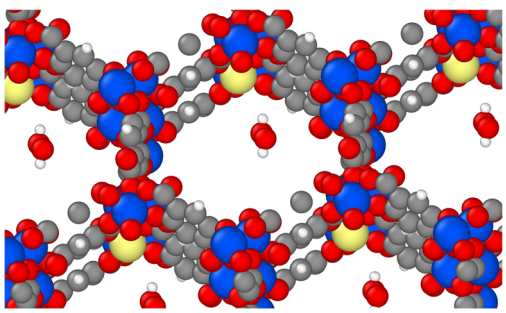

Entropic influence on the generation of Fe(IV)O species at mononuclear Fe(II) sites in metal–organic frameworks

Fernan Saiz* and Leonardo Bernasconi*

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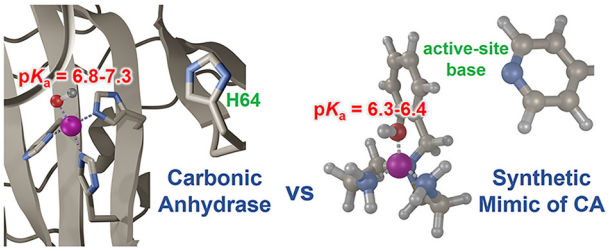
Carbonic anhydrase mimics with rationally designed active sites for fine-tuned catalytic activity and selectivity in ester hydrolysis

Foroogh Bahrami and Yan Zhao*



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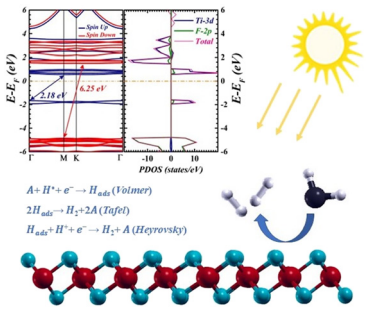
Anti-symmetric exchange and hydrogen evolution in titanium halide monolayers

Vidit B. Zala, Rishit S. Shukla, Sanjeev K. Gupta* and P. N. Gajjar*



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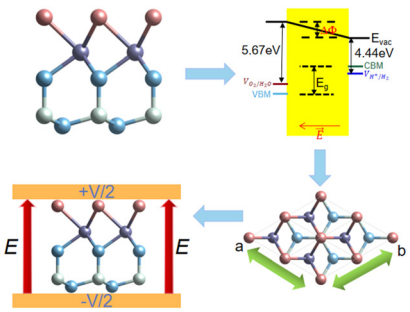
Tuning of the electronic, photocatalytic and optical properties of Janus $XWAZ_2$ (X = S, Se, Te; A = Si, Ge; Z = N, P, As) monolayers *via* strain and external electric field

Zhen Gao, Xin He, Yao He* and Kai Xiong



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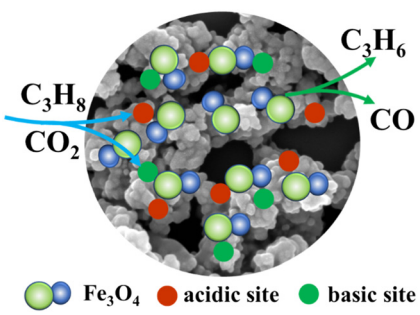
High transformation of propane in reaction with CO_2 to propylene on ZrO_2-combined Fe-based catalysts

Yuan Wang, Yan Chen, Jianli Zhang, Qingxiang Ma, Subing Fan and Tian-Sheng Zhao*



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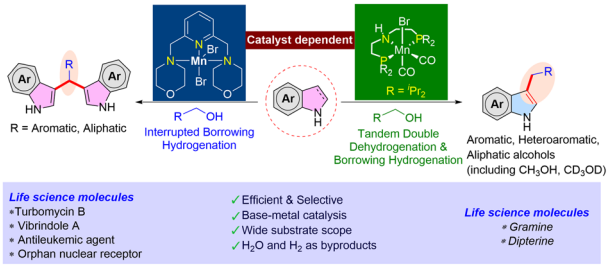

Divergence in CH alkylation of indoles under Mn catalysis

Akash Mondal, Rohit Kumar, Abhijith Karattil Suresh, Manoj Kumar Sahoo and Ekambaram Balaraman*

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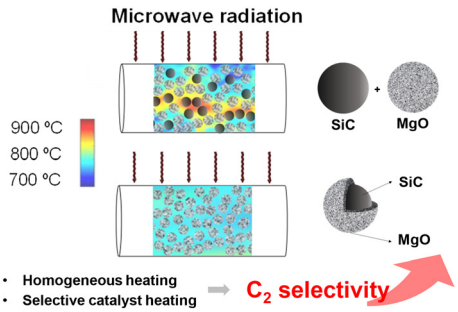

Oxidative coupling of methane under microwave: core–shell catalysts for selective C_2 production and homogeneous temperature control

Reina Kaneda, José Palomo, Lingjun Hu and Atsushi Urakawa*

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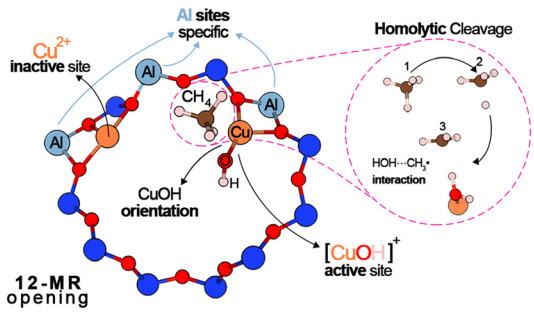

Conditions to meet for the $[CuOH]^+$ site to be favorable and reactive toward the conversion of methane to methanol over Cu-MOR zeolite

Muhammad Haris Mahyuddin,* Elbert Timothy Lasiman, Adhitya Gandaryus Saputro, Suci Valerie Casuarina, Nugraha and Hermawan Kresno Dipojono

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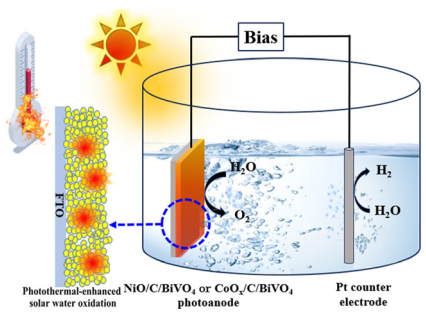

Photothermal-enhanced solar water oxidation on NiO/amorphous carbon/$BiVO_4$ and CoO_x/amorphous carbon/$BiVO_4$ photoanodes

Huichao He, Yuli Xiong, Hao Xiao, Tao Han, Yujie Guo, Jiahe Li, Qiwen Chen, Yunhuai Zhang,* Jinyan Du* and Gaili Ke*

CORRECTION

5785

Correction: CdS/TiO_2 nanostructures synthesized *via* the SILAR method for enhanced photocatalytic glucose conversion and simultaneous hydrogen production under UV and simulated solar irradiation

Kamonchanok Roongraung, Alexey Cherevan, Dominik Eder and Surawut Chuangchote*