

# Catalysis Science & Technology

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

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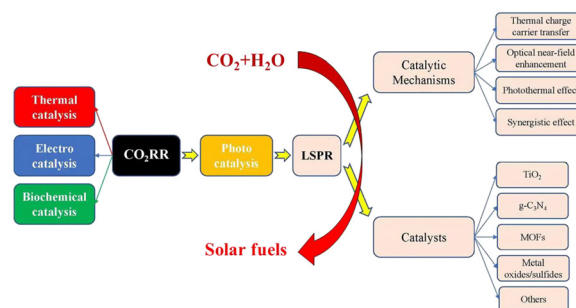
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## PERSPECTIVE

1932

### Research on photocatalytic CO<sub>2</sub> conversion to renewable synthetic fuels based on localized surface plasmon resonance: current progress and future perspectives

Jinhe Zhang, Bin Guan,\* Xingze Wu, Yujun Chen, Jiangfeng Guo, Zeren Ma, Shibo Bao, Xing Jiang, Lei Chen, Kaiyou Shu, Hongtao Dang, Zelong Guo, Zekai Li and Zhen Huang

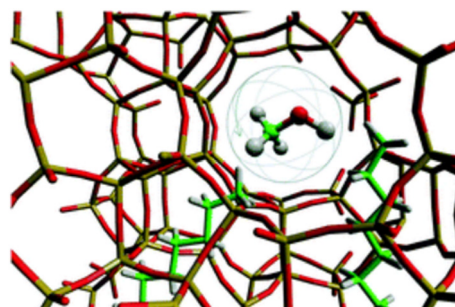


## MINI REVIEW

1976

### Neutron scattering studies of the methanol-to-hydrocarbons reaction

Andrea Zachariou, Alexander P. Hawkins, Paul Collier, Russell F. Howe, Stewart F. Parker and David Lennon\*



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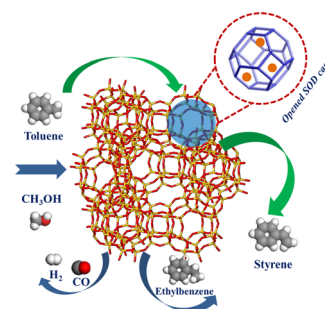


## COMMUNICATIONS

1991

**Opening sodalite cages of X zeolite for boosting toluene side-chain alkylation performance**

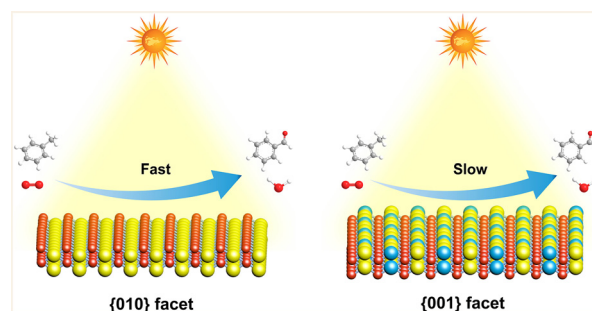
Zhe Hong,\* Lei Li, Lei Miao, Guoqing Zhao and Zhirong Zhu\*



1996

**Facet-dependent  $\text{Bi}_2\text{MoO}_6$  for highly efficient photocatalytic selective oxidation of  $\text{sp}^3$  C–H bonds using  $\text{O}_2$  as an oxidant**

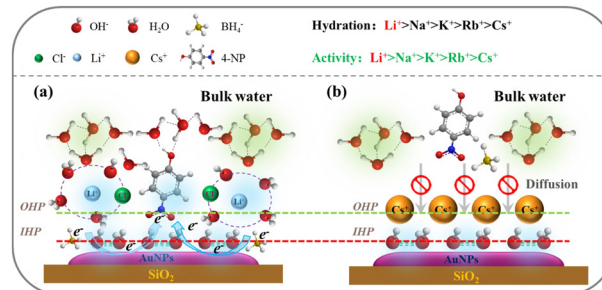
Xiaojing Yang,\* Xinju Li, Bao Zhang, Taifeng Liu and Zhenpan Chen\*



2001

**Molecular manipulation of the microenvironment of Au active sites on mesoporous silica for the enhanced catalytic reduction of 4-nitrophenol**

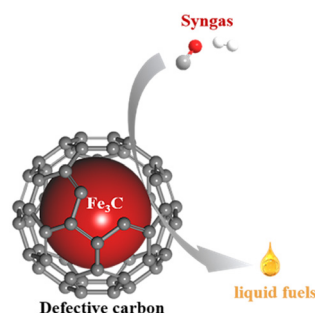
Meng Ding, Bo Peng,\* Jia-Feng Zhou, Hui Chen, Yi-Song Zhu, En-Hui Yuan, Belén Albela, Laurent Bonnevot, Peng Wu and Kun Zhang\*



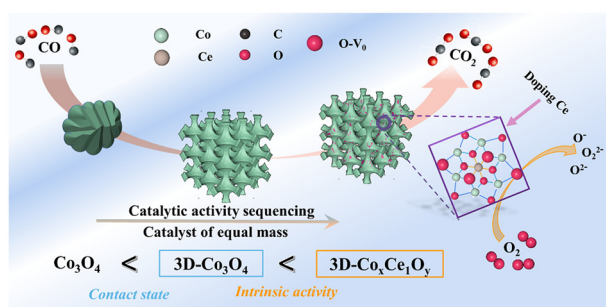
2010

**Carbon defects promoting syngas into liquid fuels over  $\text{Fe}_3\text{C}@C$  catalysts**

Zhiyuan Fu, Dan Luo, Lei Chen, Yuxue Wei,\* Mingyang Ren, Wenjing Wang, Chenghua Zhang and Song Sun



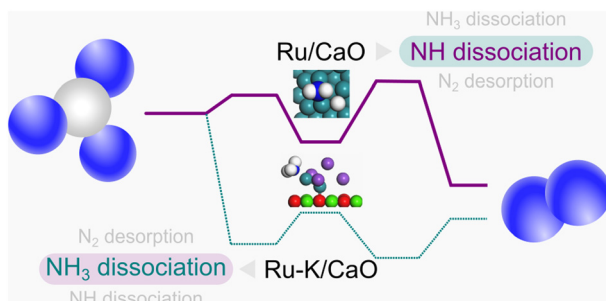
2015



### High-performance Ce doped three-dimensional ordered macroporous Co-based catalysts on CO oxidation

Kun Zhou, Miaomiao Hu, Tingyi Zhao, Qingzhao Shi, Jiaxin Feng, Xue Ma, Mingqin Zhao, Zhihui Shao and Bing Cui\*

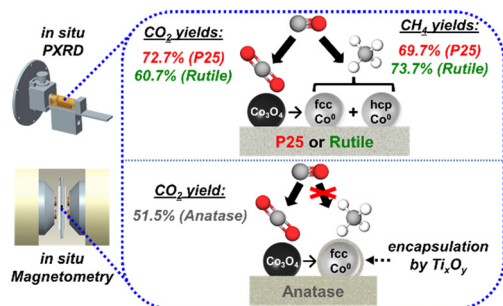
2026



### Elucidating the rate-determining step of ammonia decomposition on Ru-based catalysts using *ab initio*-grounded microkinetic modeling

Shekhar R. Kulkarni, Natalia Realpe, Attada Yerrayya, Vijay Kumar Velisoju, Salvador Sayas, Natalia Morlanes, Jose Cerillo, Sai P. Katikaneni, Stephen N. Paglieri, Bandar Solami, Jorge Gascon and Pedro Castaño\*

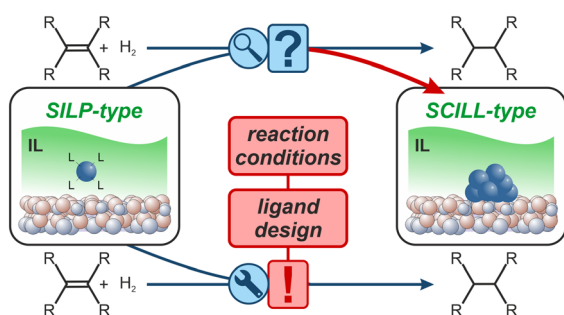
2038



### $\text{Co}_3\text{O}_4/\text{TiO}_2$ catalysts studied *in situ* during the preferential oxidation of carbon monoxide: the effect of different $\text{TiO}_2$ polymorphs

Thulani M. Nyathi, Mohamed I. Fadlalla, Nico Fischer, Andrew P. E. York, Ezra J. Olivier, Emma K. Gibson, Peter P. Wells and Michael Claeys\*

2053



### Wilkinson-type catalysts in ionic liquids for hydrogenation of small alkenes: understanding and improving catalyst stability

Eva Kratzer, Simon Schötz, Sven Maisel, Dominik Blaumeiser, Sharmin Khan Antara, Leon Ewald, Daniel Dotzel, Marco Haumann, Andreas Görling, Wolfgang Korth, Andreas Jess\* and Tanja Retzer\*

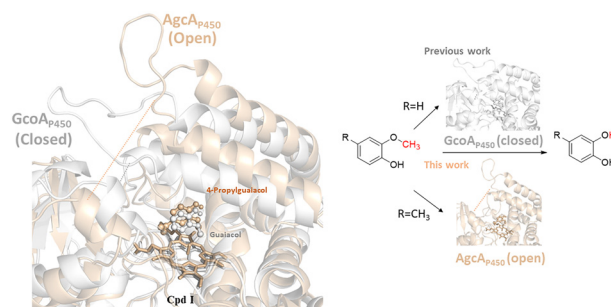


## PAPERS

2070

### The substrate specificity in the O-demethylation of 4-alkylguaiacols by cytochrome P450 AgcA<sub>P450</sub>

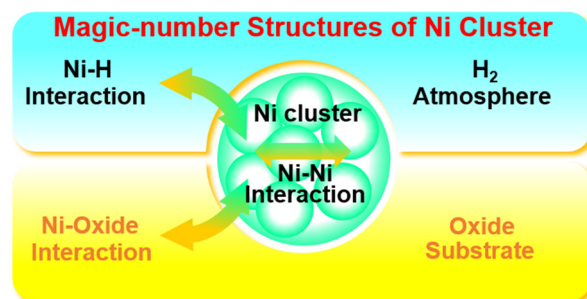
Sónia F. G. Santos, Rajesh Reddy Bommareddy, Gary W. Black, Warispreet Singh\* and Meilan Huang\*



2080

### Identifying magic-number structures of supported sub-nano Ni clusters and the influence of hydrogen coverage: a density functional theory based particle swarm optimization investigation

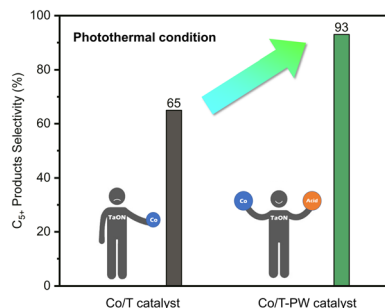
Qitang Ma, Houyu Zhu,\* Dongyuan Liu, Rui Li, Tuya Li, Hao Ren, Wen Zhao, Yuan Pan, Yunqi Liu and Wenye Guo\*



2092

### Enhancement of C<sub>5+</sub> selectivity in photothermal Fischer-Tropsch synthesis by an inorganic heteropoly acid catalyst promotor

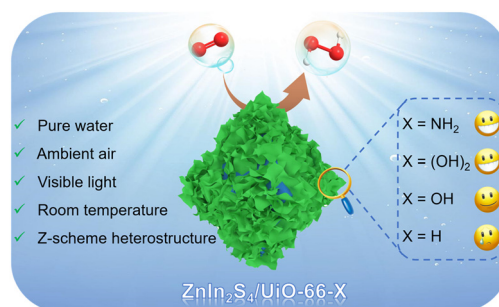
Yichi Zhang, Ruijue Hu, Haiquan Su\* and Yue Su\*



2101

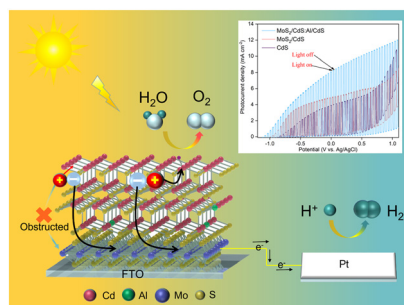
### Ligand functionalization on Zr-MOFs enables efficient visible-light-driven H<sub>2</sub>O<sub>2</sub> evolution in pure water

Jianhao Qiu, Lu Zhang, Guanglu Xia, Dingliang Dai, Yong Tang and Jianfeng Yao\*





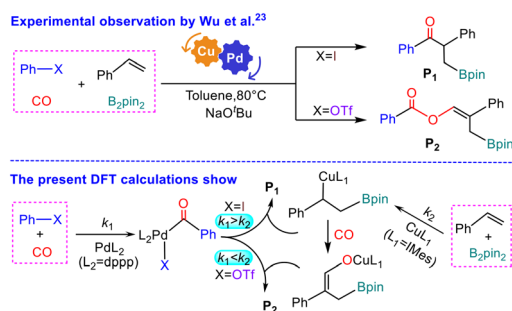
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### Aluminum-doped cadmium sulfide homojunction photoelectrode with optimal film quality and water-splitting performance

Jiangwei Zhang, Fei Yu, He Yu, Shuhui Yang, Gaotian Zhang, Feng Jiang, Menglong Zhang\* and Dongxiang Luo\*

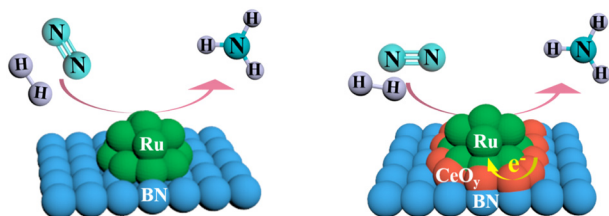
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### DFT calculations reveal the origin of controllable synthesis of $\beta$ -boronyl carbonyl compounds from Cu/Pd-cocatalyzed four-component borocarbonylation of vinylarenes

Lin Liu, Yanhong Liu, Yiyang Yang, Chengbu Liu and Dongju Zhang\*

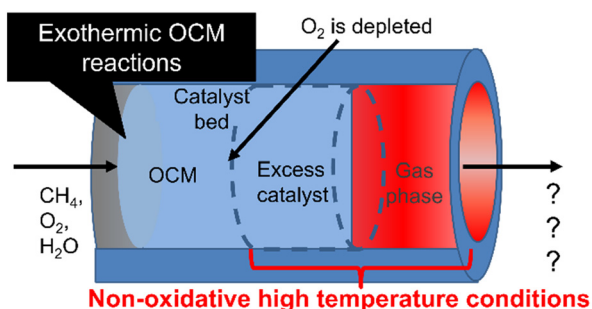
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### Strong $\text{Ru}^{\delta+}$ - $\text{Ce}^{3+}$ electronic interaction induced by a $\text{CeO}_2$ overlayer for enhanced low-temperature $\text{N}_2$ -to- $\text{NH}_3$ conversion

Lingling Li, Mingyuan Zhang, Tianhua Zhang, Yinglong Gao, Jun Ni,\* Yanliang Zhou, Jianxin Lin, Xiuyun Wang\* and Lilong Jiang

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### Consequence of products from oxidative coupling of methane in a non-oxidative high temperature environment

Haruka Komada, Keisuke Obata, Duanxing Li, S. Mani Sarathy and Kazuhiro Takanabe\*

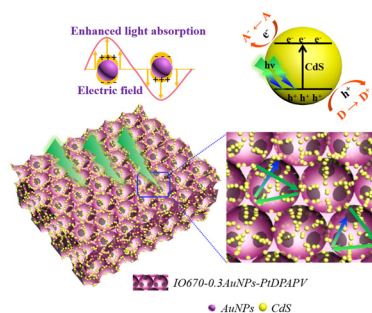


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## Double local electromagnetic fields collaboratively enhanced triplet–triplet annihilation upconversion for efficient photocatalysis

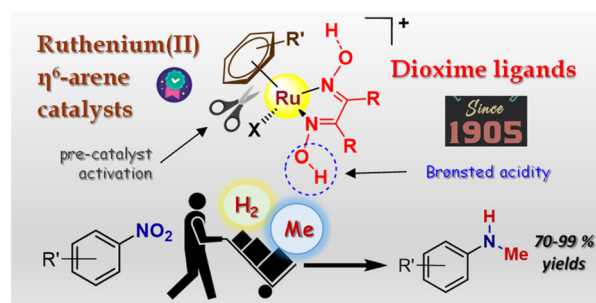
Jiaojiao Fang,\* Chengyang Zhu, Yaru Ni, Chunhua Lu\* and Zhongzi Xu



2160

## Ruthenium(II) arene complexes bearing simple dioxime ligands: effective catalysts for the one-pot transfer hydrogenation/*N*-methylation of nitroarenes with methanol

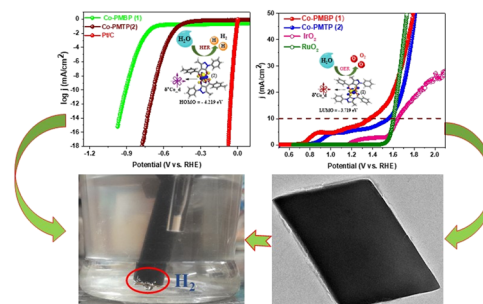
Roberta Colaiezzi, Chiara Saviozzi, Nicola di Nicola, Stefano Zacchini, Guido Pampaloni, Marcello Crucianelli, Fabio Marchetti, Andrea Di Giuseppe\* and Lorenzo Biancalana\*



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## Distorted octahedral cobalt(II)–acylpyrazolone complex with a tunable lattice-strain structure – an efficient electrocatalyst for overall water splitting

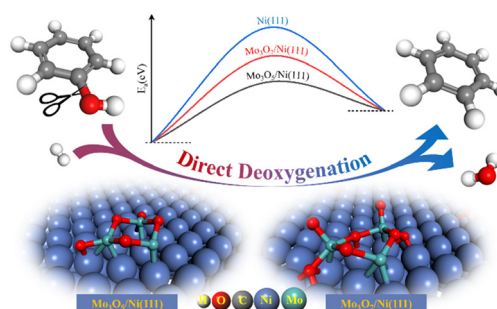
Claudelle Sybilline Anensong Djadock, Singaram Vengatesan,\* Alain Charly Tagne Kuate, Jean Ngoune,\* Subbiah Ravichandran and Subramanyan Vasudevan



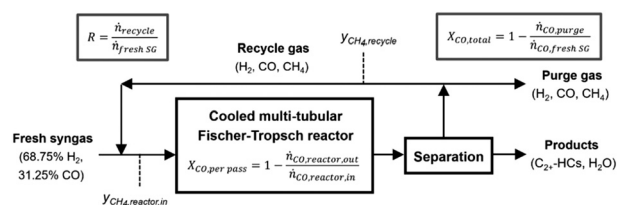
2201

## Role of MoO<sub>x</sub>/Ni(111) interfacial sites in direct deoxygenation of phenol toward benzene

Bowen Wu, Liwen Li, Hua Wang, Jinyu Han, Xinli Zhu\* and Qingfeng Ge\*



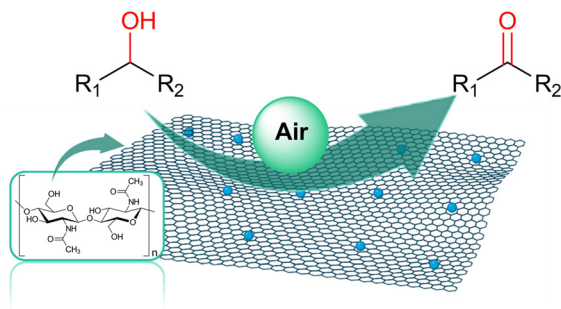
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## Improvement of a multi-tubular Fischer-Tropsch reactor with gas recycle by appropriate combination of axial activity distribution and gas velocity

Christoph Kern and Andreas Jess\*

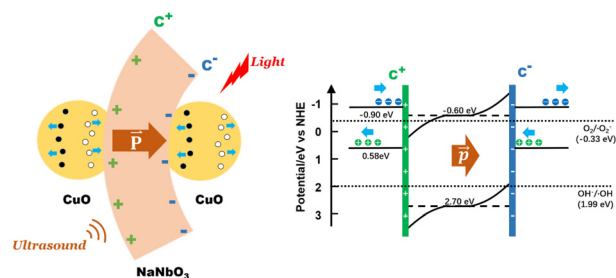
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## Controlled alcohol oxidation reactions by supported non-noble metal nanoparticles on chitin-derived N-doped carbons

Daniele Polidoro, Daniel Ballesteros-Plata, Alvis Perosa, Enrique Rodríguez-Castellón, Daily Rodríguez-Padrón\* and Maurizio Selva\*

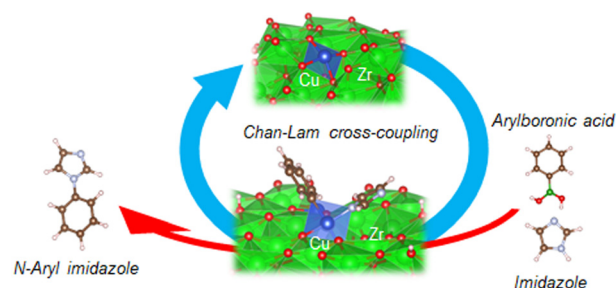
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## CuO/NaNbO<sub>3</sub> nanorod piezoelectric photocatalysts promoted tetracycline removal: a dynamic internal electric field

Hongtao Wang, Haiyue Zhang, Ziyang Long and Haifeng Shi\*

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## Catalysis of surface dispersed Cu<sup>2+</sup> species on t-ZrO<sub>2</sub>: square-planar Cu catalyzed cross-coupling of arylboronic acid and imidazole

Masaru Kondo,\* Tatsuya Joutsuka,\* Kakeru Fujiwara, Tetsuo Honma, Masahiko Nishijima and Shohei Tada\*





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## Dry reforming of methane over single-atom Rh/ $\text{Al}_2\text{O}_3$ catalysts prepared by exsolution

Martijn J. Mekker, Jasper Biemolt, Jeen de Graaf, Yi-An Lin, Nicolaas P. van Leest, Alessandro Troglia, Roland Bliem, Bas de Bruin, Gadi Rothenberg\* and Ning Yan\*

