

# Catalysis Science & Technology

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

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## IN THIS ISSUE

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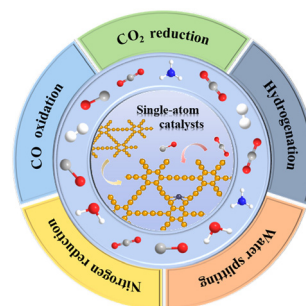
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pp. 5180–5189.  
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## MINI REVIEW

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### Environmental applications of single-atom catalysts based on graphdiyne

Mengdie Zhao, Liyun Jiang and Qi Yu\*

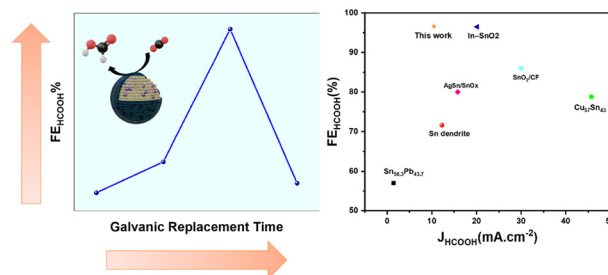


## COMMUNICATION

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### Dynamic hydrogen bubbling templated AgSn@SnO<sub>x</sub> electrocatalyst for selective electrochemical CO<sub>2</sub> reduction: adjusting the binding energy of the HCOO\* intermediate

Hisham G. El-Aqapa, Ibrahim M. Badawy, Ghada E. Khedr, Ahmed M. Agour, Doha M. Sayed, Manar M. Taha and Nageh K. Allam\*



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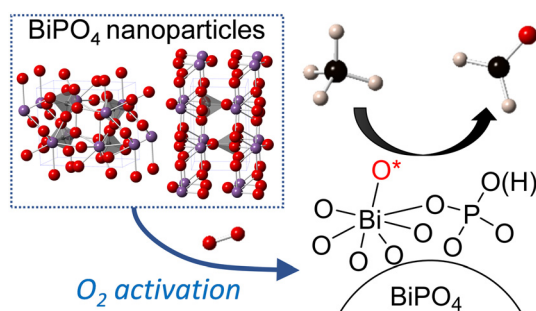
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### Bismuth phosphate nanoparticle catalyst for direct oxidation of methane into formaldehyde

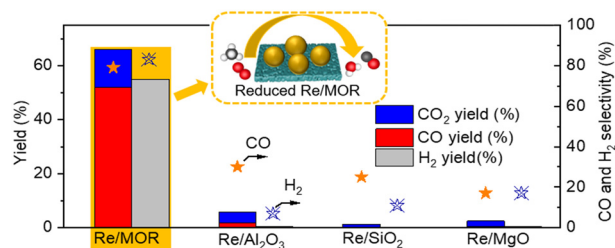
Aoi Matsuda, Kazuhiko Obara, Atsushi Ishikawa, Meng-Hsuan Tsai, Chia-Hsin Wang, Yu-Chuan Lin, Michikazu Hara and Keigo Kamata\*



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### Mordenite-stabilised rhenium catalyst for partial oxidation of methane to syngas

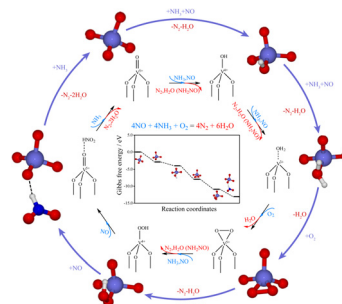
Lingcong Li, Abhijit Shrotri, Kazuya Kato, Atsushi Fukuoka and Hirokazu Kobayashi\*



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### Active vanadium(IV) species synthesized at low-temperature facilitate excellent performance in low-temperature NO<sub>x</sub>-catalytic removal

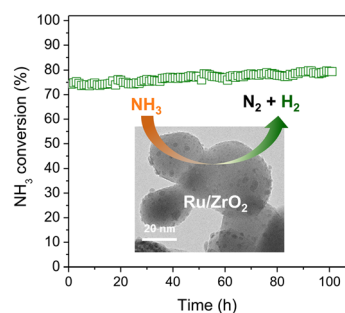
Liwei Sun, Peng Liu, Jianheng Xu, Kaijie Liu, Zeshu Zhang, Yibo Zhang\* and Xiangguang Yang\*



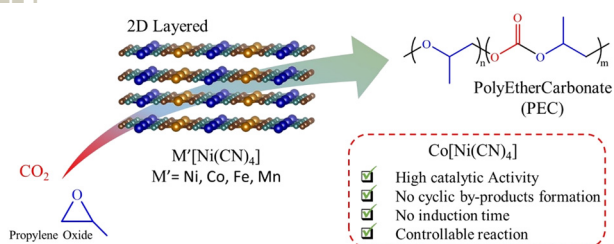
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### Steering ammonia decomposition over Ru nanoparticles on ZrO<sub>2</sub> by enhancing metal-support interaction

Tong Zhang, Xiaohua Ju, Lvyue Liu, Lin Liu,\* Teng He, Yunhua Xu, Hanying Wang and Ping Chen



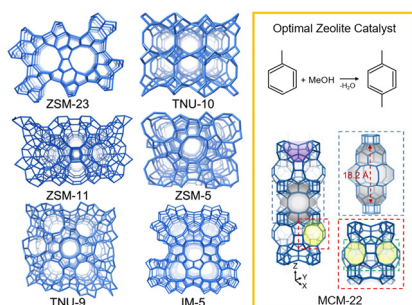
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## Two-dimensional (2D) layered double metal cyanides as alternative catalysts for $\text{CO}_2$ /propylene oxide copolymerization

Guillermo Penche, María P. González-Marcos,\*  
Juan R. González-Velasco, Cyler W. Vos  
and Christopher M. Kozak

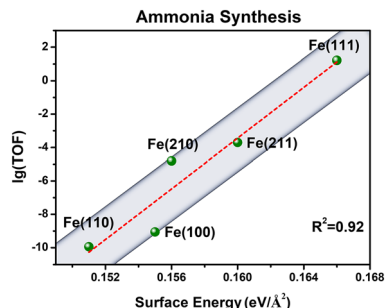
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## Impact of medium-pore zeolite topology on *para*-xylene production from toluene alkylation with methanol

Deependra Parmar, Seung Hyeok Cha, Chenfeng Huang,  
Hsu Chiang, Seth Washburn, Lars C. Grabow  
and Jeffrey D. Rimer\*

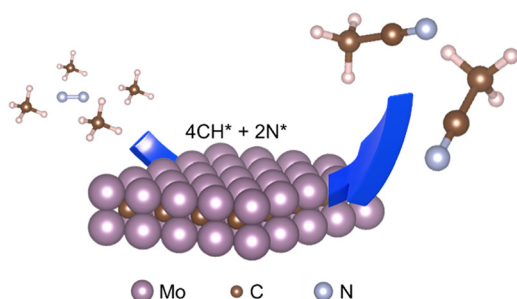
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## Correlation between the structural features and intrinsic activity trend of Fe surfaces for ammonia synthesis

Jianfu Chen, Ye Chen, Haifeng Wang and P. Hu\*

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## Co-activation of methane and nitrogen to acetonitrile over $\text{MoC}_x/\text{Al}_2\text{O}_3$ catalysts

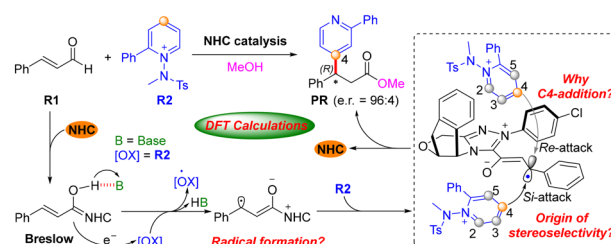
Korawich Trangwachirachai, I-Ting Kao,  
Wei-Hsiang Huang, Chi-Liang Chen and Yu-Chuan Lin\*



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### NHC-catalyzed enantioselective radical reactions of enal and pyridinium salt: mechanism and origin of regio- and stereoselectivities

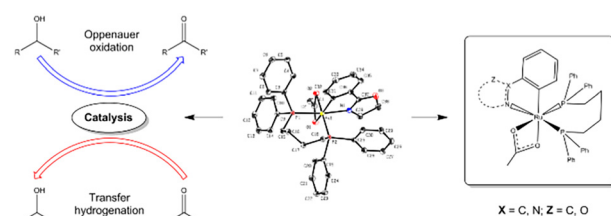
Kuohong Chen, Jiaming Zhang, Qianqian Shi, Lili Han, Dongmin Fu, Donghui Wei\* and Yanyan Zhu\*



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### Cyclometalated C<sup>N</sup> diphosphine ruthenium catalysts for Oppenauer-type oxidation/transfer hydrogenation reactions and cytotoxic activity

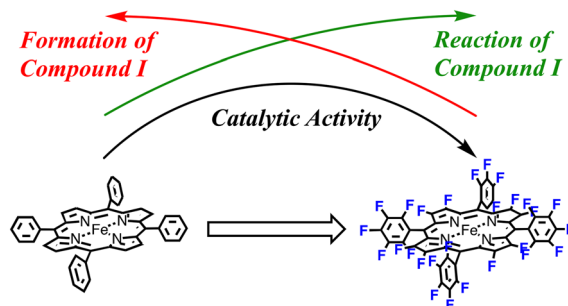
Dario Alessi, Pierfrancesco Del Mestire, Eleonora Aneggi, Maurizio Ballico, Antonio P. Beltrami, Marta Busato, Daniela Cesselli, Alexandra A. Heidecker, Daniele Zuccaccia and Walter Baratta\*



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### Tuning catalytic activity with steric and electron-withdrawing effects of a porphyrin substituent

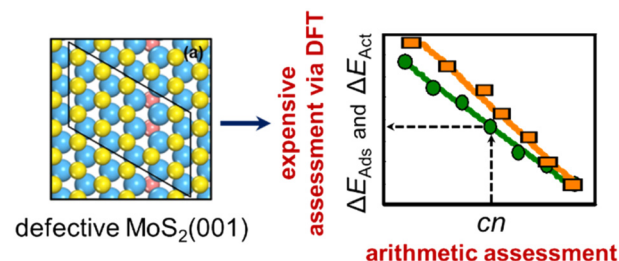
Lulu Jiang, Yosuke Imanaka and Hiroshi Fujii\*



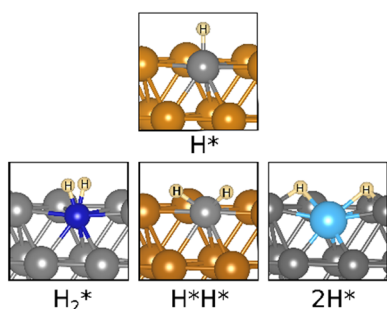
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### A structure-sensitive descriptor for the design of active sites on MoS<sub>2</sub> catalysts

Hai-Yan Su, Federico Calle-Vallejo\* and Keju Sun\*



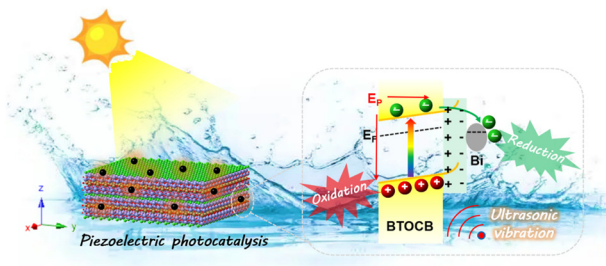
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### Hydrogen complexes on single atom alloys: classical chemisorption *versus* coordination chemistry

Ilaria Barlocco, Giovanni Di Liberto\* and Gianfranco Pacchioni

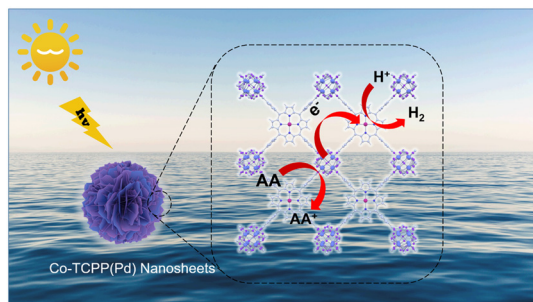
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### *In situ* construction of a Sillén–Aurivillius layered perovskite-based 0D/2D homologous Schottky junction for efficient piezo-photocatalytic activity

Jian Yang, Yali Xue, Chuang Han, Xiaorui Zhang, Ke Sa, Jin Jia, Hanlin Ye and Yujun Liang\*

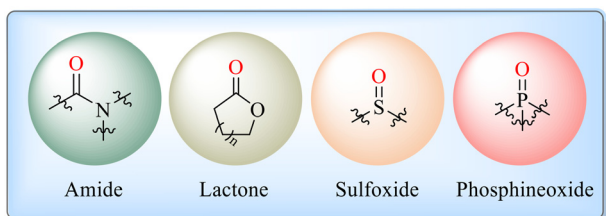
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### 2D photosensitive porphyrin-based MOFs integrated with a Pd cocatalyst with fast charge transfer for efficient photocatalytic hydrogen evolution

Yacen Tang, Mingzuo Chen, Chenghua Zhang,\* Huyumao Li, Youzhou He,\* Xiangdong Lai, Liujun Tao, Jiajia Jing and Xingyan Liu\*

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### Theoretical study of reductive CO<sub>2</sub> functionalization with amines and phenylsilanes: what kind of solvents can be used as catalysts?

Pan Du, Xinyue Liu, Xinyi Dong, Nianyang Li, Rui Liu, Li Li and Jiyang Zhao\*

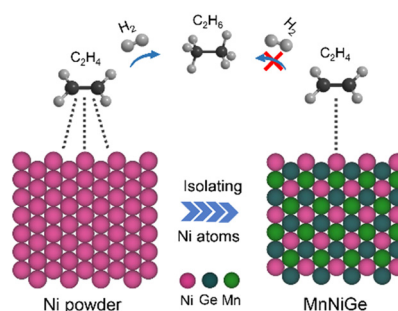


## PAPERS

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### Enhancing selectivity for semi-hydrogenation of Ni by periodic isolation in the MM'X structure

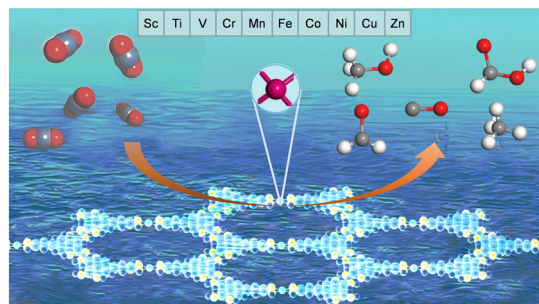
Yinglei Liu, Changjin Xu, Bo Yang, Xiangying Meng, Gaowu Qin and Song Li\*



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### Density functional theory calculation of two-dimensional transition metal–hexaiminotriphenylene (TM–HITP) electrocatalytic CO<sub>2</sub> reduction

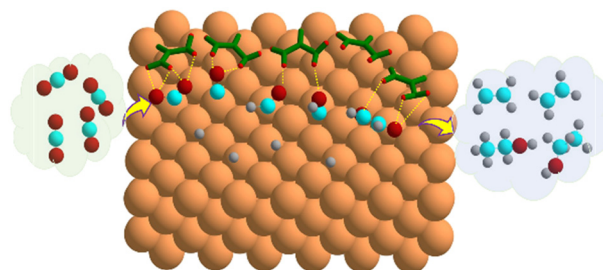
Xianshi Zeng, Luliang Liao, Meishan Wang\* and Hongming Wang\*



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### Organic additive for the selective C<sub>2</sub>-product formation on Cu(100): a density functional theory mechanistic study

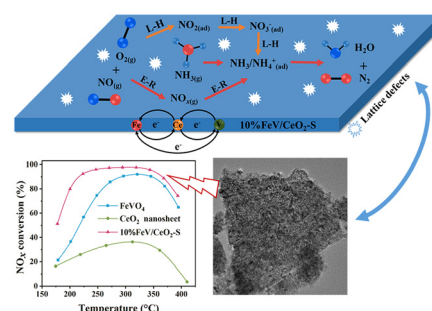
Amitabha Das, Shyama Charan Mandal and Biswarup Pathak\*



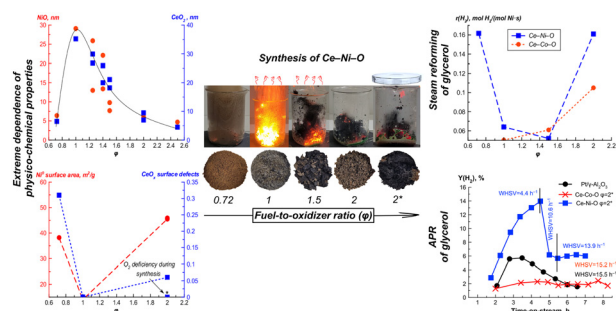
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### Improved NH<sub>3</sub>-SCR activity by the cooperation of FeVO<sub>4</sub> and CeO<sub>2</sub> nanosheet catalysts: structure and mechanism

Yuqiu Liu, Biyi Huang, Jianyi Zhang, Yanting Chen, Jinsheng Chen\* and Jinxiu Wang\*



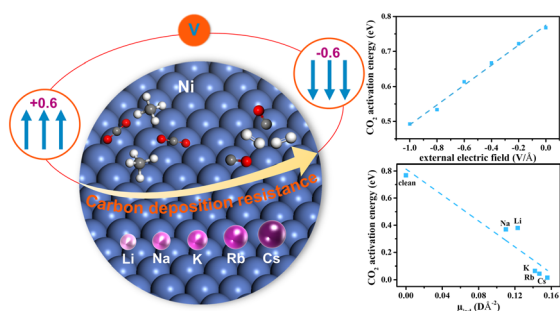
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### CeO<sub>2</sub>-supported Ni and Co catalysts prepared by a solution combustion method for H<sub>2</sub> production from glycerol: the effect of fuel/oxidizer ratio and oxygen excess

Anna N. Matveyeva,\* Shamil O. Omarov, Marianna A. Gavrilova, Andrey D. Trofimuk, Johan Wärnå and Dmitry Yu. Murzin\*

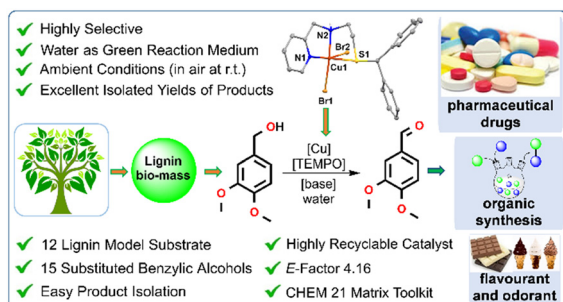
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### Theoretical study on dry reforming of methane over a Ni(111) surface under electric fields and with alkali metal additives

Hui Jiao and Gui-Chang Wang\*

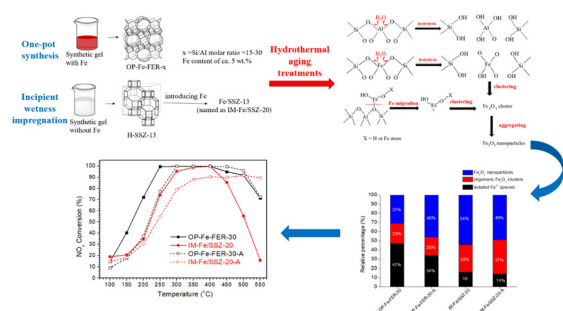
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### Selective aerobic oxidation of biomass model compound veratryl alcohol catalyzed by air-stable copper(II) complexes in water

Narayan Ch. Jana, Sourav Behera, Suraj Kumar Maharana, Rakesh R. Behera and Bidraha Bagh\*

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### Study on the catalytic activity and hydrothermal stability of one-pot synthesized Fe-based FER zeolites for NH<sub>3</sub>-SCR

Xinyue Hu, Jialing Chen,\* Shaokang He, Tingyu Liang,\* Shenke Zheng,\* Lijun Lu, Chenxi Hao, Kaixin Chen, Tingting Li, Lan Yi, Li Guo and Xiaoqin Wu

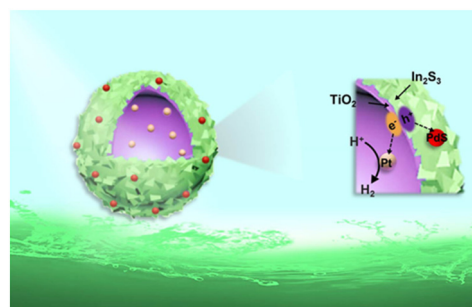


## PAPERS

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### Hierarchical hollow $\text{TiO}_2/\text{In}_2\text{S}_3$ heterojunction photocatalyst decorated with spatially separated dual co-catalysts for enhanced photocatalytic $\text{H}_2$ evolution

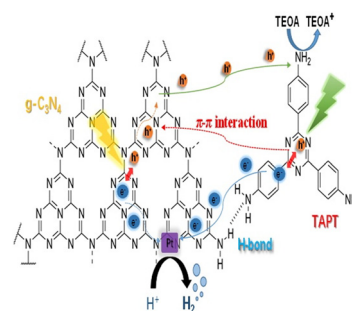
Ruyu Zhang, Xiaowei Jia, Xianchun Liu,\* Mingliang Sun, Yuyu Wang, Anqi Xie, Xiaodan Yu, Zhan Shi and Yan Xing\*



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### g- $\text{C}_3\text{N}_4$ coupled with 2,4,6-tris(4-aminophenyl)-1,3,5-triazine via $\pi$ - $\pi$ interactions enhanced visible-light photocatalytic $\text{H}_2$ evolution from water splitting

Chen-Chuang Li, Ikram Ullah, Gang Wang\* and An-Wu Xu\*



## CORRECTION

5462

### Correction: Design of gold catalysts for activation of $\text{H}_2$ and H-donor molecules: transfer hydrogenation and $\text{CO}_2$ hydrogenation

Jhonatan Luiz Fiorio, Lais Reis Borges, Tomaz Neves-Garcia, Danielle Kimie Kikuchi, Raíza Rosa Garcia Guerra and Liane Marcia Rossi\*

