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A multidisciplinary journal focussing on all fundamental science and technological aspects of catalysis  
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See Raoul Naumann d'Alnoncourt et al., pp. 4117–4130.  
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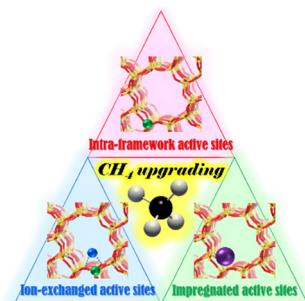
**Inside cover**  
See Masakazu Iwamoto et al., pp. 4131–4140.  
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## PERSPECTIVE

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### Zeolite-based catalysts for oxidative upgrading of methane: design and control of active sites

Mizuho Yabushita,\* Ryota Osuga,\* Toshiyuki Yokoi and Atsushi Muramatsu\*

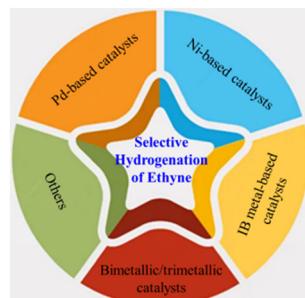


## MINI REVIEW

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### Recent research advances on catalysts for selective hydrogenation of ethyne

Jiawen Guo, Yiming Lei, Huimin Liu,\* Yuqiao Li, Dezheng Li and Dehua He\*



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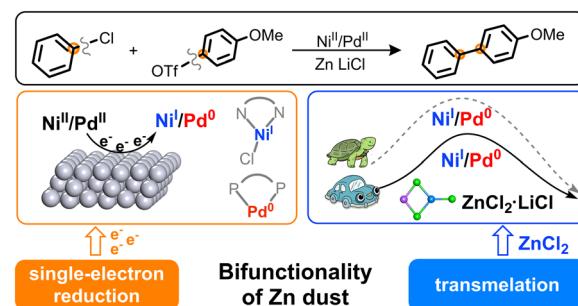


## COMMUNICATION

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**Bifunctionality of Zn dust in Ullmann C–C cross-coupling by Ni/Pd dual catalysis: theoretical insight**

Rong-Wan Gao, Yu-Jiao Dong, Bo Zhu\* and Wei Guan\*

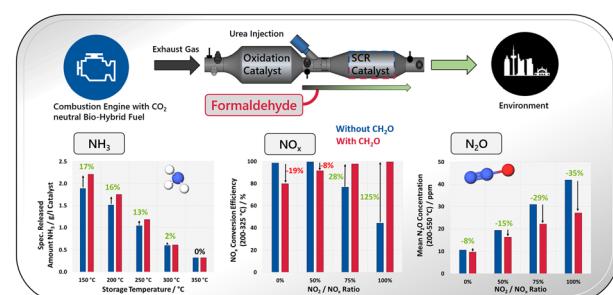


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**Impact of unintentionally formed  $\text{CH}_2\text{O}$  in oxygenated fuel exhausts on De $\text{NO}_x$ -SCR at different  $\text{NO}_2/\text{NO}_x$  ratios under close to real conditions**

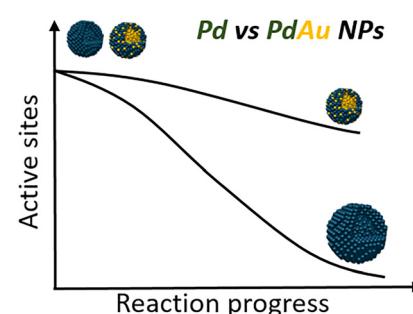
Ariel A. Schönberger Alvarez,\* Can Özyalcin, Tom Padeken, Peter Mauermann, Bastian Lehrheuer, Stefan Sterlepper, Ahed Abouserie, Maurice Vennewald, Ulrich Simon, Regina Palkovits and Stefan Pischinger



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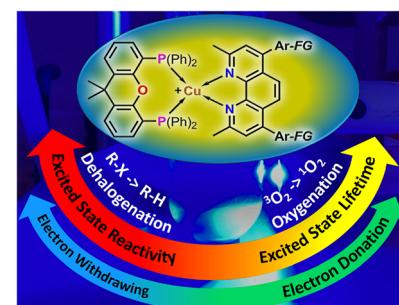
Jose Pinto, Andreas Weilhard,\* Luke T. Norman, Rhys W. Lodge, David M. Rogers, Aitor Gual, Israel Cano, Andrei N. Khlobystov, Peter Licence\* and Jesum Alves Fernandes\*



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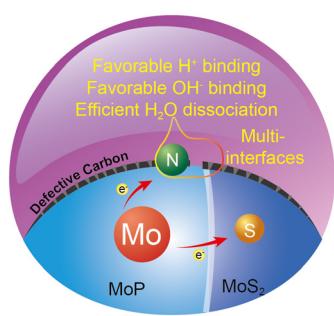
**Rich or poor: the impact of electron donation and withdrawal on the photophysical and photocatalytic properties of copper(i) complexes**

Florian Doettinger, Christian Kleeberg, Clémence Queffélec, Stefanie Tschierlei, Yann Pellegrin\* and Michael Karnahl\*



## PAPERS

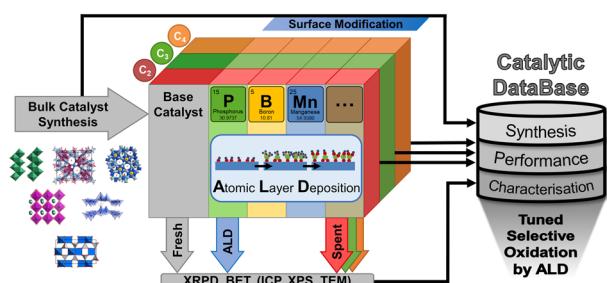
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### Multi-interfacial charge polarization for enhancing the hydrogen evolution reaction

Di Zhao,\* Mengyun Hou, Wuyi Feng, Pengyu Song, Kaian Sun, Lirong Zheng, Shoujie Liu, Jiatao Zhang,\* Minhua Cao\* and Chen Chen\*

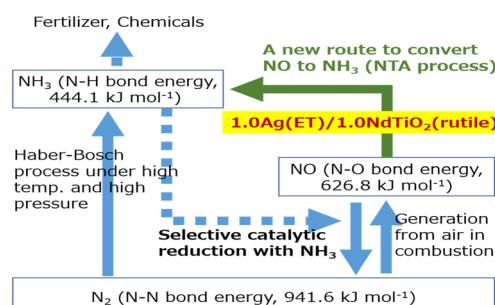
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### Tuning catalysis by surface-deposition of elements on oxidation catalysts via atomic layer deposition

Frederik Rüther, Robert Baumgarten, Fabian Ebert, Esteban Gioria, Raoul Naumann d'Alnoncourt,\* Annette Trunschke and Frank Rosowski

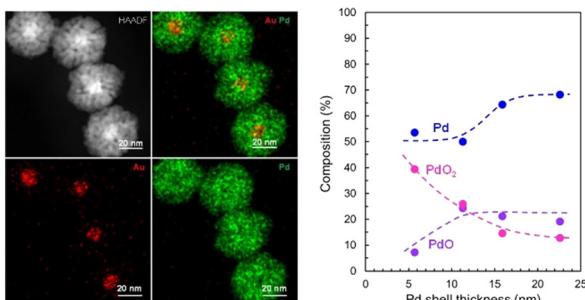
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### Catalysts for selective conversion of nitric oxide to ammonia (NTA) with propene in the presence of a large excess of oxygen and water vapor

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Junfang Hao, Bin Liu, Mari Takahashi, Shinya Maenosono\* and Jianhui Yang\*

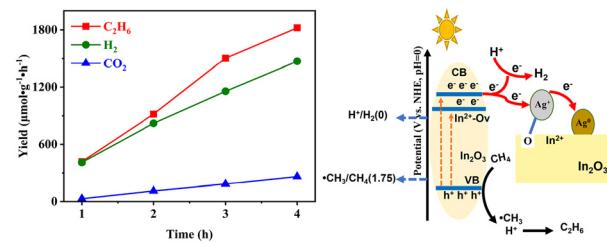


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**Oxygen vacancies stabilized  $\text{Ag}^+$  to enhance the performance of an  $\text{Ag}/\text{In}_2\text{O}_3$  photocatalyst for non-oxidative coupling of methane**

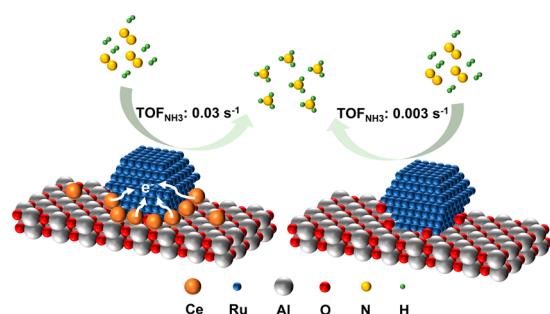
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**Decoration of Ru nanoparticles on  $\gamma$ -alumina with sub-nanometer ceria species for efficient catalytic ammonia synthesis**

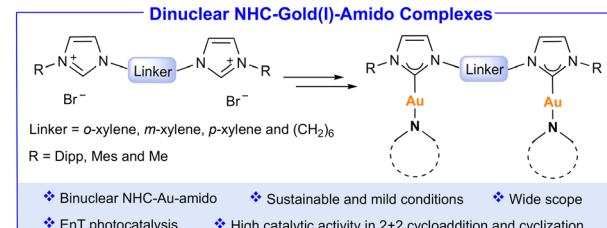
Ji Feng, Lin Liu,\* Xiaohua Ju, Qike Jiang, Jiemin Wang, Jianping Guo, Teng He and Ping Chen



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**Novel dinuclear NHC–gold(I)–amido complexes and their application in energy transfer photocatalysis**

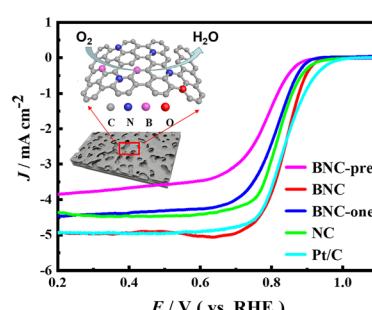
Xinyuan Ma, Vladislav A. Voloshkin, Ekaterina A. Martynova, Marek Beliš, Min Peng, Marco Villa, Nikolaos V. Tzouras, Wim Janssens, Kristof Van Hecke, Paola Ceroni and Steven P. Nolan\*



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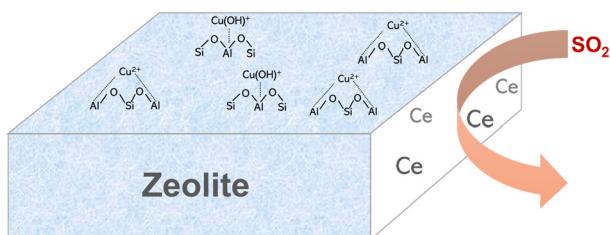
**Effective construction of a B and N co-doped 3D porous carbon metal-free oxygen reduction reaction catalyst by a secondary pyrolysis strategy**

Guang-Lan Li,\* Xin Wang, Fei Deng, Zhong-Fa Lu, Ce Hao, Suli Wang\* and Gongquan Sun



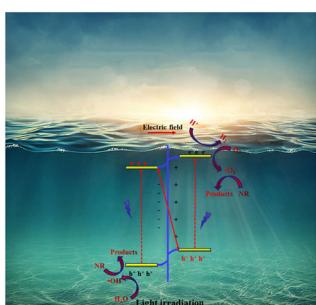
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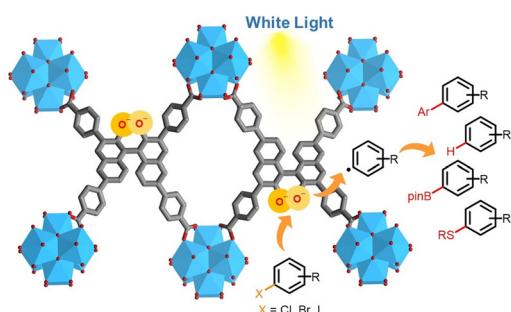
Liumei Ge, Aiyong Wang, Xiaonan Hu, Jin Zhang, Jiebing He, Penglu Wang, Lupeng Han and Dengsong Zhang\*

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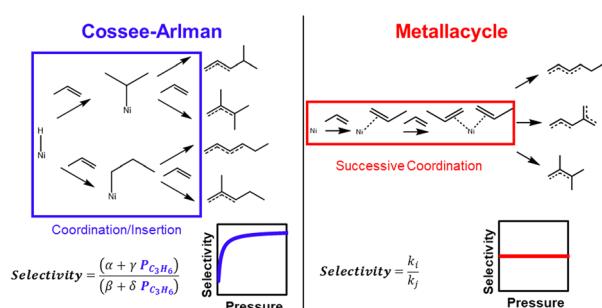
Na Mao

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**Binaphthol derivatives as catalysts for visible light induced aryl halide derivatizations**

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**Validation of the Cossee–Arlman mechanism for propylene oligomerization on Ni/UiO-66**

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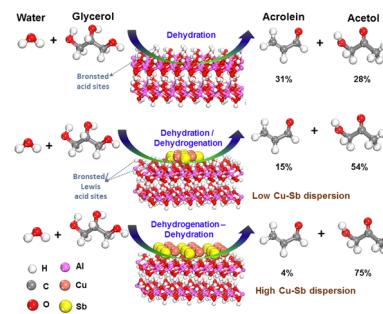


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**Effect of Cu and Sb active sites on the acid–base properties and reactivity of hydrated alumina for glycerol conversion by dehydrogenation and dehydration reactions**

Regina Claudia Rodrigues dos Santos,\*  
Moacir José da Silva Júnior, Gabriel Lima Nunes  
and Antoninho Valentini\*



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**Bandgap matching-triggered self-sustaining photocatalytic oxidation**

Weiwei Cheng, Zhiqin Yuan,\* Yanjun Lin and Chao Lu\*

