# **Catalysis Science & Technology**

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

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# Cover

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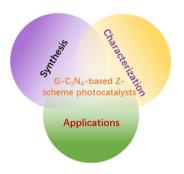
Inside cover See Peter Deglmann, Alex J. Plajer et al., pp. 2937-2945. Image reproduced by permission of Alex J. Plajer from Catal. Sci. Technol., 2023, 13, 2937.

# MINI REVIEWS

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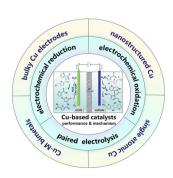
Recent advances on g-C<sub>3</sub>N<sub>4</sub>-based Z-scheme photocatalysts for organic pollutant removal

Chunxue Li, Hao Lu,\* Guixiang Ding, Qing Li\* and Guangfu Liao\*



Recent progress of Cu-based electrocatalysts for upgrading biomass-derived furanic compounds

Jingwen Tan, Mei Jiang, Kun Yu, Yuyang Song, Wenbiao Zhang and Qingsheng Gao\*



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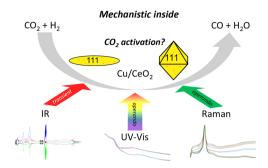


# COMMUNICATION

### 2922

Unravelling the mechanism of CO<sub>2</sub> activation over low-loaded Cu/CeO<sub>2</sub>(111) catalysts using operando and transient spectroscopies

Marc Ziemba and Christian Hess\*

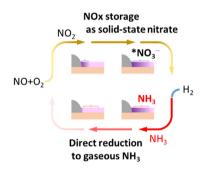


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Catalytic conversion to ammonia through solidstate nitrate as a proposal for the emerging usage of nitrogen oxides

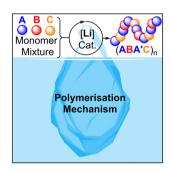
Atsuko Tomita, Ryutaro Wakabayashi and Tatsuo Kimura\*



### 2937

Lithium catalysed sequence selective ring opening terpolymerisation: a mechanistic study

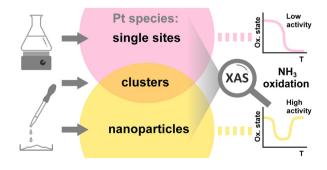
Peter Deglmann,\* Sara Machleit, Cesare Gallizioli, Susanne M. Rupf and Alex J. Plajer\*



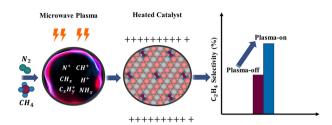
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Structure sensitivity of alumina- and zeolitesupported platinum ammonia slip catalysts

Vasyl Marchuk, Xiaohui Huang, Jan-Dierk Grunwaldt and Dmitry E. Doronkin\*



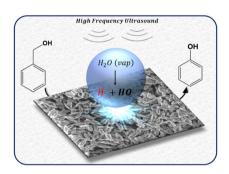
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# Post-plasma catalysis: charge effect on product selectivity in conversion of methane and nitrogen plasma to ethylene and ammonia

Sarojini Tiwari, Saleh Ahmat Ibrahim, Brandon Robinson, Siobhan Brown, Qiang Wang, Fanglin Che\* and Jianli Hu\*

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# Water-assisted sonochemically-induced demethylenation of benzyl alcohol to phenol over a structurally stable cupric oxide catalyst

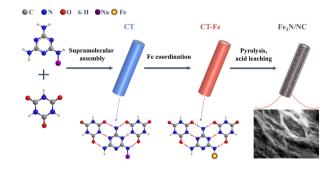
Teseer Bahry, Shang Jiang, Umesh Jonnalagadda, Wen Liu, Benoit Teychene, Francois Jerome, Samir H. Mushrif\* and Prince N. Amaniampong\*



# Multi-functionality of rhodium-loaded MOR zeolite: production of H<sub>2</sub> via the water gas shift reaction and its use in the formation of NH<sub>3</sub>

Shunsaku Yasumura, Ken Nagai, Yucheng Qian, Takashi Toyao, Zen Maeno and Ken-ichi Shimizu\*

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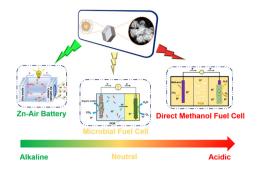
# Supramolecular confinement synthesis of ultrafine iron nitride nanocrystals for the oxygen reduction reaction in Zn-air batteries

Fanglei Yao, Jiabao Bi, Lei Yu, Liming Dai, Wenkang Xue, Jingyao Deng, Zhihui Yao, Yunyan Wu, Jingwen Sun\* and Junwu Zhu

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Metal-organic framework-loaded carbonencapsulated nano-catalyst as a pH-universal oxygen reduction reaction electrocatalyst for various fuel cell devices

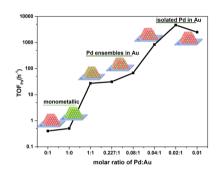
Xintao Zhou, Mingyang Wu, Kai Chen, Suqin Ci\* and Zhenhai Wen\*



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The preparation of silica supported, dilute limit PdAu alloys via simultaneous strong electrostatic adsorption

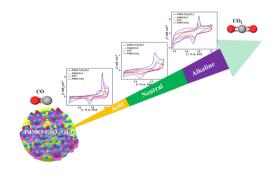
Anhua Dong, Abolfazl Shakouri, Starvros Karakalos, Doug Blom, Christopher T. Williams and John R. Regalbuto\*



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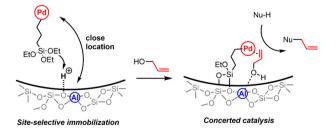
Ternary PdNiO nanocrystals-ornamented porous CeO<sub>2</sub>/onion-like carbon for electrooxidation of carbon monoxide: unveiling the effect of supports and electrolytes

Adewale K. Ipadeola, Aderemi B. Haruna, Aboubakr M. Abdullah,\* Rashid S. Al-Hajri, Roman Viter, Kenneth I. Ozoemena\* and Kamel Eid\*



A heterogeneous Pd complex catalyst for allylation with allylic alcohols enhanced by an aluminumdoped mesoporous silica support

Siming Ding, Yuichi Manaka, Masayuki Nambo, Wang-Jae Chun, Ikuyoshi Tomita and Ken Motokura\*



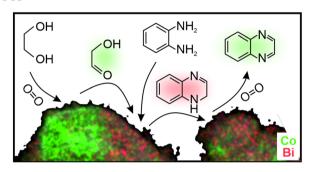
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# Full-crystalline monolithic EU-1 zeolite: sustainable synthesis and its applications in the hydroisomerization of ethylbenzene with meta-xylene

Guanghua Liang, Jianyi Chen,\* Tao Dou, Zhijie Wu, Xiaofeng Li and Yuanshuai Liu\*

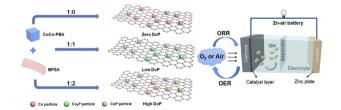
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Sustainable synthesis of azobenzenes, quinolines and quinoxalines via oxidative dehydrogenative couplings catalysed by reusable transition metal oxide-Bi(III) cooperative catalysts

Marianna Kocsis, Kornélia Baán, Sándor B. Ötvös, Ákos Kukovecz, Zoltán Kónya, Pál Sipos, István Pálinkó and Gábor Varga\*

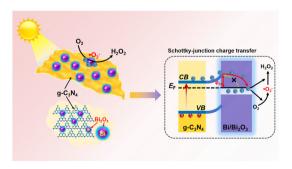
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Tunable phosphorization degree of Co<sub>x</sub>P<sub>v</sub>@N,Pdoped carbon as a highly-active bifunctional electrocatalyst for rechargeable zinc-air batteries

Yang Liu, Chen Li, Min Yuan, Xinghao Zhang, Haikuo Lan, Yuting Chen, Minge Tian, Kang Liu\* and Lei Wang\*

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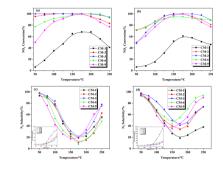
Schottky junction with Bi/Bi<sub>2</sub>O<sub>3</sub> core-shell nanoparticle modified g-C<sub>3</sub>N<sub>4</sub> for boosting photocatalytic H<sub>2</sub>O<sub>2</sub> evolution from pure water

Xinyue Yan, Guiyang Yu,\* Chuanwang Xing, Yujia Hu, Heyuan Liu and Xiyou Li\*

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# Mechanism of NO reduction by $NH_3$ over $CuMnO_x$ catalysts and the influence mechanism of CO

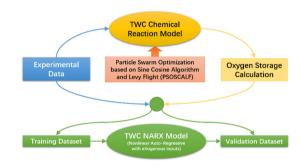
Chengbo Xuan, Shiwang Han, Luyuan Wang,\* Xingyu Zhang,\* Rongfeng Sun, Xingxing Cheng, Zhiqiang Wang, Chunyuan Ma, Tiantian Zhao and Xukai Hou



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# Oxygen storage modeling of a three-way catalyst based on a NARX network

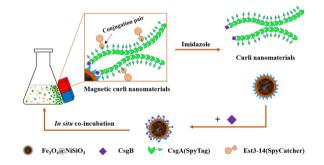
Zhuoxiao Yao, Tao Chen,\* Weipeng Lin, Yifang Feng, Ran Xia, Le Li and Tao Song



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In situ preparation of programmable curli nanomaterials as fine-tuned sustainable supports enabling selective and oriented incorporation of enzymes

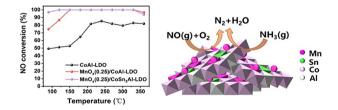
Hao Dong, Wenxue Zhang, Chao Chen\* and Ping Wang\*



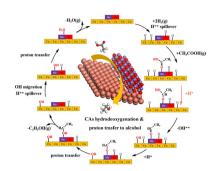
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# Mn mixed oxide catalysts supported on Sn-doped CoAl-LDO for low-temperature NH<sub>3</sub>-SCR

Hange Wang, Wen Chen, Wei Jin and Yueli Liu\*

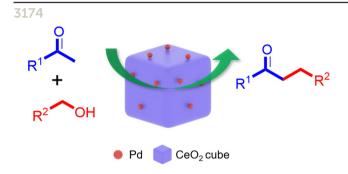


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Insights into the mechanism of carboxylic acid hydrogenation into alcohols at the MnO/Cu (111) interface: a combined DFT and kinetic study

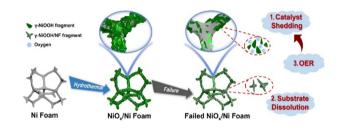
Jingbo Du, Yifei Chen, Lingtao Wang and Minhua Zhang\*



Palladium single-atom catalyst supported on ceria for  $\alpha$ -alkylation of ketones with primary alcohols

Dongyuan Yang, Hongli Wang,\* Ce Liu and Chun-Ran Chang\*

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Insights into the deactivation mechanism of a selfsupported nickel electrode for 5-hydroxymethyl furfural electrooxidation: focus on the stability of the electrode as a whole

Fangbing Liu, Nan Lin,\* Deyuan Xin, Xinxin Li, Linchuan Cong, Fuyu Han and Haibo Lin