

Catalysis Science & Technology

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

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Cover

See Rudi Fasan,
Yong Zhang *et al.*,
pp. 1802–1813.

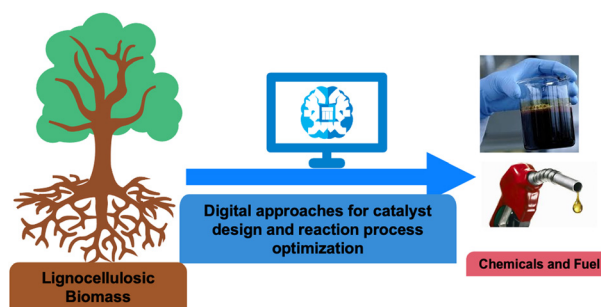
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Technol.*, 2025, 15, 1802.
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PERSPECTIVE

1689

Digitalisation of catalytic processes for sustainable production of biobased chemicals and exploration of wider chemical space

Firdaus Parveen* and Anna G. Slater

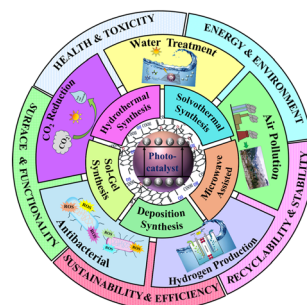


REVIEWS

1702

Recent progress in understanding the role of graphene oxide, TiO₂ and graphene oxide–TiO₂ nanocomposites as multidisciplinary photocatalysts in energy and environmental applications

Ayush Badoni, Sahil Thakur, Narayanasamy Vijayan, Hendrik Christoffel Swart, Mikhael Bechelany, Zhengsen Chen, Shuhui Sun, Qiran Cai, Ying Chen and Jai Prakash*



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Fundamental questions
Elemental answers

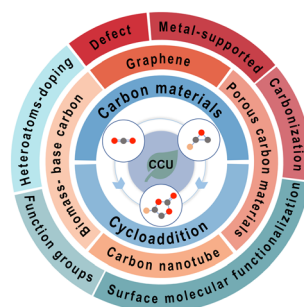


REVIEWS

1771

Preparation and modification of carbon based materials as efficient catalysts in the cycloaddition of carbon dioxide towards cyclic carbonates: a mini review

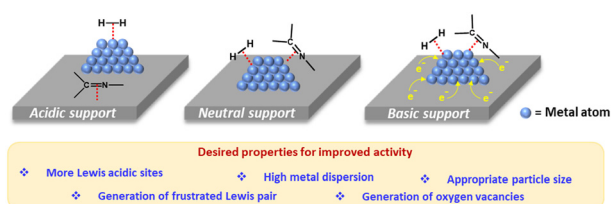
Jianhan Yang, Jiangnan Huang,* Hao-Fan Wang, Hongjuan Wang, Hao Yu and Yonghai Cao*



1787

Deciphering the role of (metal-)support on the reductive amination of levulinates

Kanika Saini, Neeraj Sharma, Rahul Gautam, Supan, Christophe Len and Shunmugavel Saravanamurugan*

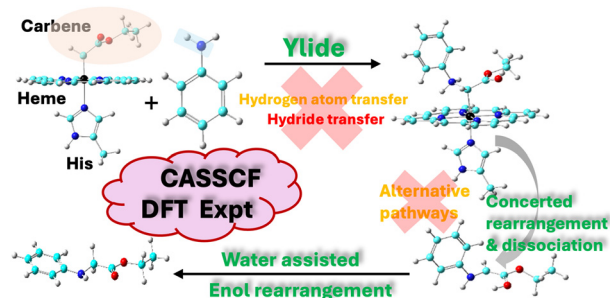


PAPERS

1802

A comprehensive mechanistic investigation of sustainable carbene N–H insertion catalyzed by engineered His-ligated heme proteins

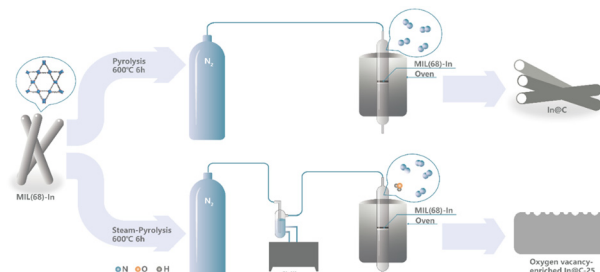
Rahul L. Khade, Ronald Daisuke Adukure, Xinyi Zhao, Carolyn Wang, Rudi Fasan* and Yong Zhang*



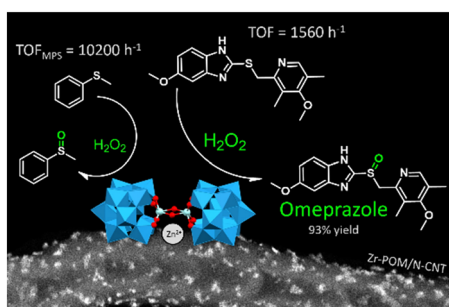
1814

Oxygen vacancy-engineered In₂O₃@carbon catalysts from steam-pyrolyzed MOFs for photothermal CO₂ hydrogenation

Xinhuilan Wang, Luis Garzon-Tovar, Alejandra Rendón-Patiño, Diego Mateo* and Jorge Gascon*



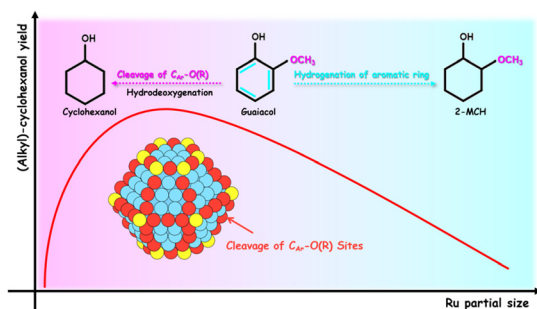
1825



Highly efficient supported catalysts based on Zr-containing polyoxometalates and multiwalled carbon nanotubes for selective oxidation of thioethers with H₂O₂

Vladimir A. Lopatkin, Vasilii Yu. Evtushok,*
Olga A. Stonkus, Lidiya S. Kibis, Olga Yu. Podyacheva
and Oxana A. Kholdeeva*

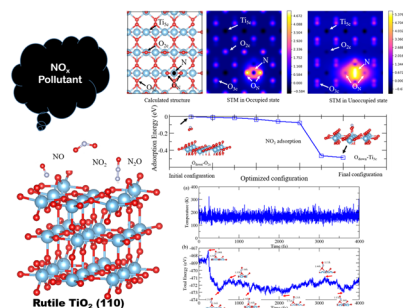
1839



Optimized Ru catalysts for the selective cleavage of C_{Ar}-OCH₃ bonds in guaiacol under mild conditions

Chuqiao Song, Wei Cheng, Xiaojie Wu, Shufang Zhao,*
Ying Tang, Xin Tang, Yao Xu, Lili Lin* and Siyu Yao*

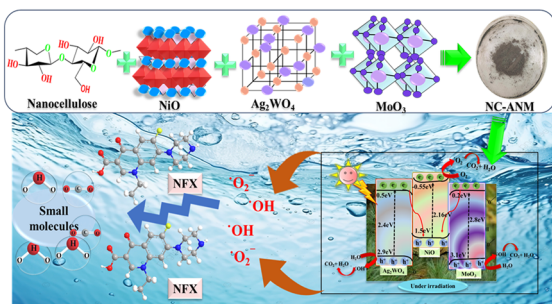
1850



Illustrating the surface chemistry of nitrogen oxides (NO_x) adsorbed on rutile TiO₂ (110) with the aid of STM and AIMD simulation

S. Muthukrishnan, R. Vidya* and Anja Olafsen Sjøstad

1865



Photocatalytic norfloxacin degradation enabled by a dual S-scheme nanocellulose-based Ag₂WO₄/NiO/MoO₃ tertiary heterojunction

Shabnam Sambyal, Vinay Chauhan, Pooja Shandilya*
and Aashish Priye*

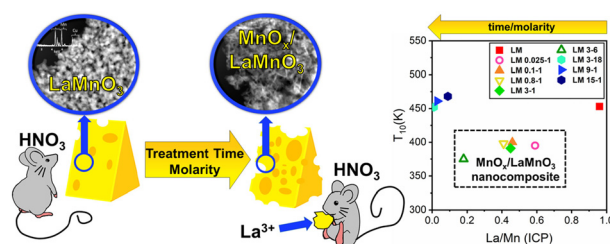


PAPERS

1882

Perovskite-derived $\text{MnO}_x/\text{LaMnO}_3$ nanocomposites to boost CO oxidation activity

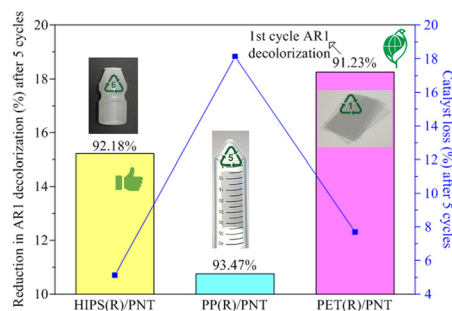
Andrea Felli, Alessandra Toso, Andrea Braga, Sara Colussi, Marta Boaro, Jordi Llorca, Byron Truscott, Christine Artner-Wallner and Alessandro Trovarelli*



1894

Synthesis of photocatalyst composite films from recycled plastics via hot pressing for dye wastewater treatment

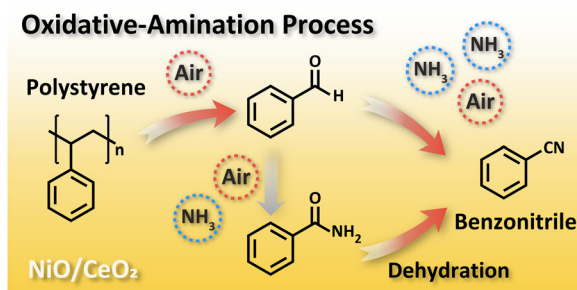
Kui-Hao Chuang,* Zhe-Ai Lin and Ming-Yen Wey*



1905

Efficient upgrading of polystyrene plastics to nitriles through a catalytic oxidative amination process

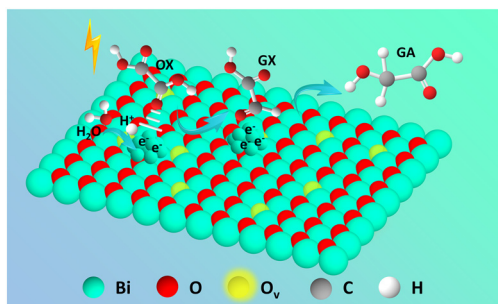
Chengyang Sun, Yong Guo, Xiaohui Liu and Yanqin Wang*



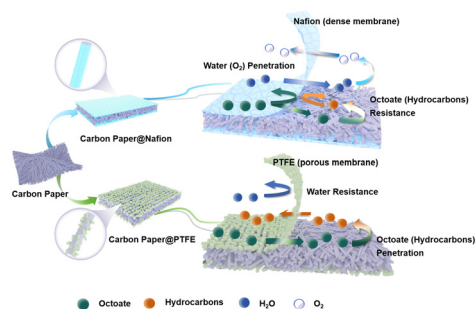
1914

The *in situ* structural evolution of Bi_2O_3 facilitates the electrocatalytic hydrogenation of oxalic acid to glycolic acid

Donghai Chen, Haolin Cheng, Yan Fu* and Jinli Zhang*



1926

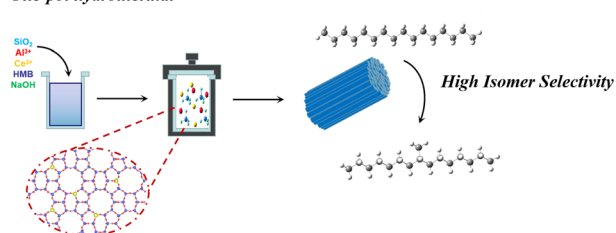


Electrochemical decarboxylation of medium-chain fatty acids into hydrocarbons controlled by the polymer coatings on carbon-based electrodes

Dian Zhang, Tiantian Hu, Dezhang Ren,* Jian Yang, Fan Lin, Zichen Li and Zhibao Huo

1937

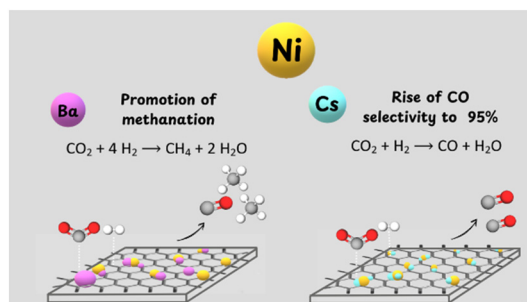
One-pot hydrothermal



Doping trace cerium in ZSM-48 *in situ* during hydrothermal synthesis for efficient hydroisomerization of a long-chain *n*-alkane

Wenjun Zhang, Mingwei Zhang, Linlin Liu, Songzu Tang, Li Wang, Xiangwen Zhang and Guozhu Li*

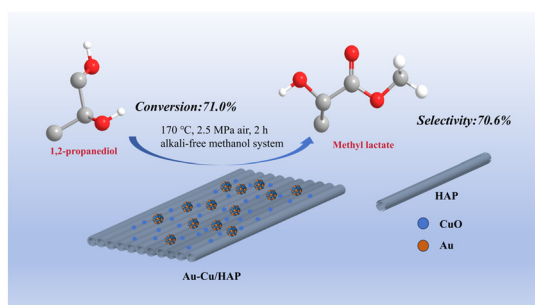
1948



Effect of Cs and Ba promoters on Ni/graphite catalysts for CO₂ conversion *via* the reverse water gas shift reaction

J. Moral-Pombo, J. M. Conesa-Alonso, E. Campos-Castellanos, E. García-Bordejé, A. Guerrero-Ruiz and I. Rodríguez-Ramos*

1958



Oxidation of 1,2-propanediol to methyl lactate over hydroxyapatite-supported Au–Cu catalysts with varying Ca/P ratios

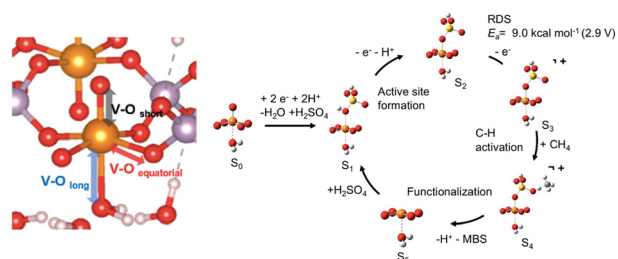
Junying Tian, Yingying Fan, Tao Wei, Qingxia Guo, Weiguo Fang, Yuanyuan Cong, Dongqiang Zhang and Yongle Guo*



1972

Potential-driven sulfate coordinated active configuration for electrochemical C–H bond activation

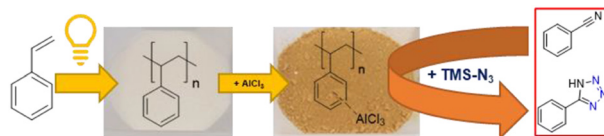
Jui-Hsien Chen, You-Chuan Chu, Tong Lin, Cheng-Han Tso, Guan-Bo Wang, Chia-Shuo Hsu, Hao Ming Chen and Hsiao-Chien Chen*



1983

Polystyrene-bound AlCl_3 – a catalyst for the solvent-free synthesis of aryl-substituted tetrazoles

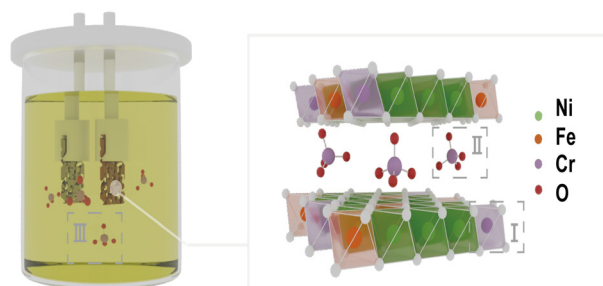
Max Schmallegger,* Mathias Wiech, Sebastian Soritz, Miriam de J. Velásquez-Hernández, Brigitte Bitschnau, Heidrun Gruber-Woelfler and Georg Gescheidt*



1989

Synergy of mixed chromium species on NiFe layered double hydroxides for promoting alkaline water oxidation

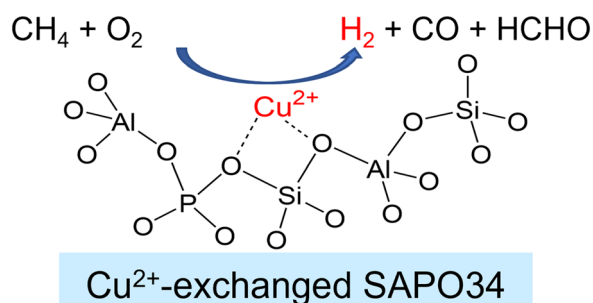
Yongqiang Yang, Jianlei Jing, Zudong Shen, Bo Li, Mengze Ma, Qihao Sha, Wei Liu, Xinlong Guo, Shihang Li, Zhichuan Li,* Yun Kuang,* Daojin Zhou* and Xiaoming Sun



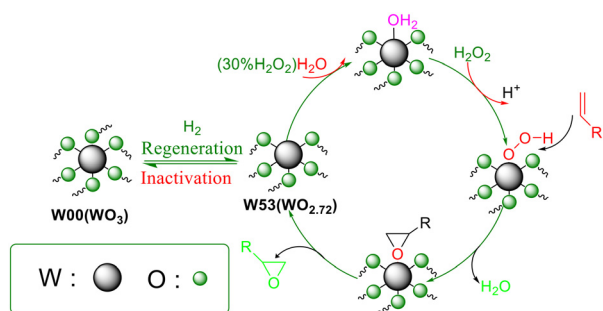
1998

Formation of HCHO , CO and H_2 by methane oxidation with O_2 over Cu catalysts stabilized in silicoaluminophosphates

Mana Shimakawa, Rieko Nagase, Ryoya Kugo, Junya Ohyama and Sakae Takenaka*



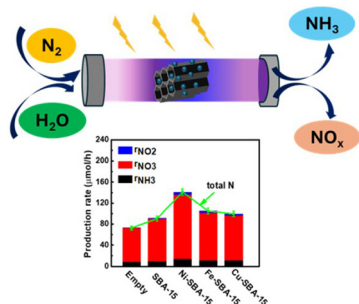
2008



Regulation of the oxygen vacancies of WO_x for highly efficient catalytic epoxidation of cyclooctene

Yunwei Wang, Yingyong Wang,* Zhimin Yin, Xincheng Li, Xianmo Gu, Ruiyi Wang* and Zhanfeng Zheng*

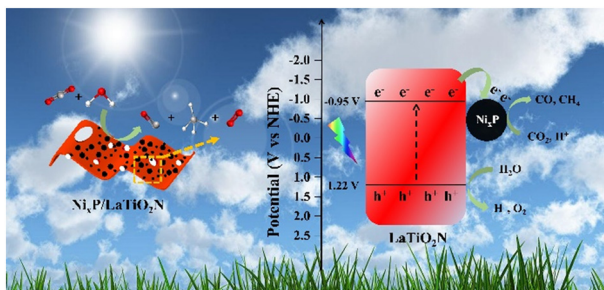
2016



Nonthermal plasma integrated with catalysts for nitrogen fixation from nitrogen and water

Yanna Liu, Zhaofei Li and Hua Song*

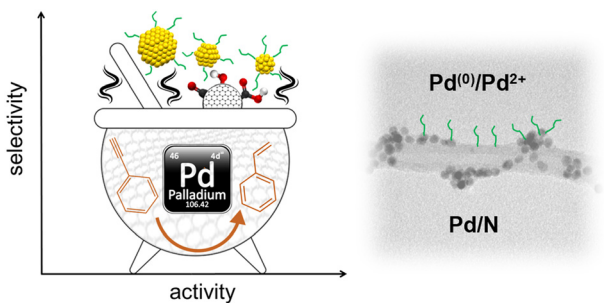
2027



Construction of a 0D/2D $Ni_xP/LaTiO_2N$ Schottky junction photocatalyst for efficient visible-light-driven photocatalytic CO_2 reduction

Guoyu Xu, Yanan Chen, Peiling Lin, Zizhong Zhang, Tao Ji and Wenye Su*

2034



Toward decorrelation of surface oxygen groups from metal dispersion effects in Pd/C hydrogenation catalysts

Edgardo A. Leal Villaruel, Cécile Marcelot, Cecilia C. Torres, Katerina Soulantica, Cristian H. Campos* and Philippe Serp*

