

Catalysis Science & Technology

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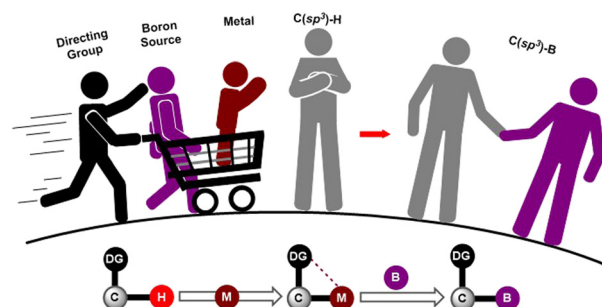
See Julia A. Valla *et al.*, pp. 5559–5573.
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REVIEWS

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Substrate-directed C(sp³)-H borylation via transition metal catalysis: expanding the toolbox for C-H functionalization

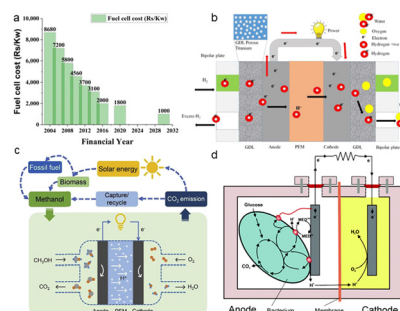
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Zexu Jia, Xiaoqiu Lin and Congju Li*



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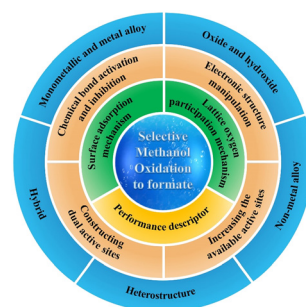


REVIEWS

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Recent advances in selective methanol oxidation electrocatalysts for the co-production of hydrogen and value-added formate

Jiaxin Li, Hongmei Yu,* Jingchen Na, Senyuan Jia, Yutong Zhao, Kaiqiu Lv, Wenzhuo Zhang, Jun Chi and Zhigang Shao*

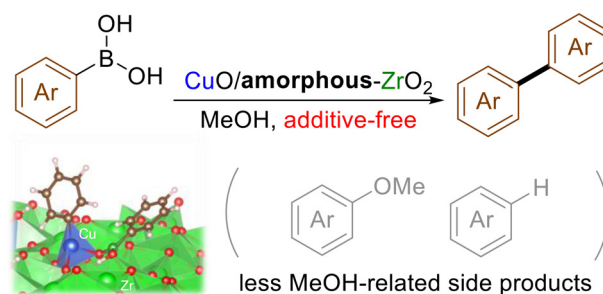


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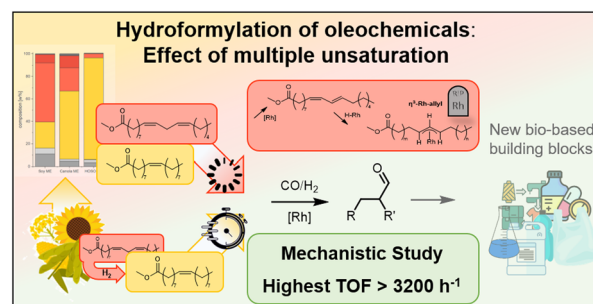
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The effect of polyunsaturation – insights into the hydroformylation of oleochemicals

Thomas Friedrich Hubertus Roth, Maximilian Lukas Spiekermann, David Lütkenhaus, Fabian Niefer, Dieter Vogt and Thomas Seidensticker*

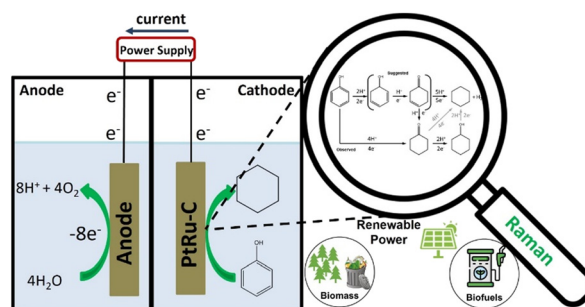


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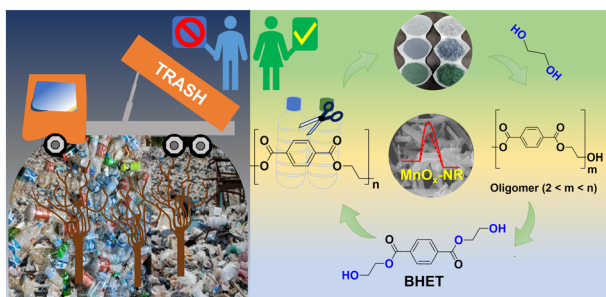
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Effect of Pt and Ru-based catalysts on the electrochemical hydrodeoxygenation of phenol to cyclohexane

Jeffrey R. Page, Amol Pophali, Taejin Kim, Juan A. Lopez-Ruiz, Stoyan Bliznakov and Julia A. Valla*



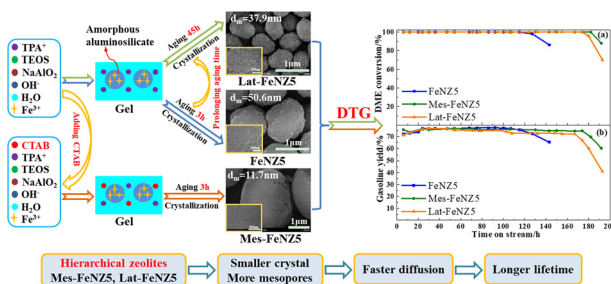
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Efficient glycolysis of used PET bottles into a high-quality valuable monomer using a shape-engineered MnO_x nanocatalyst

Bhattu Swapna, Nittan Singh, Suranjana Patowary, Pankaj Bharali, Giridhar Madras and Putla Sudarsanam*

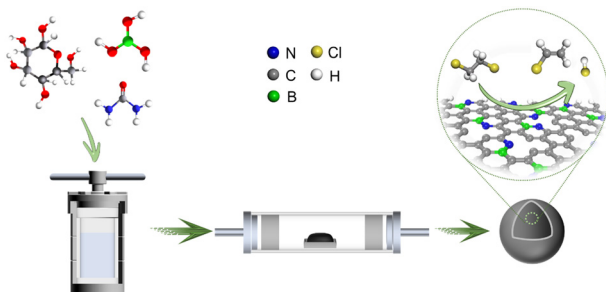
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Facile synthesis of hierarchical nanocrystalline $\text{H}[\text{Fe}, \text{Al}]\text{ZSM-5}$ with boosted lifetime for DTG reactions

Jianqing Li,* Hui Wang, Guangbo Liu, Tao He, Zhiqi Wang, Jingli Wu and Jinhu Wu*

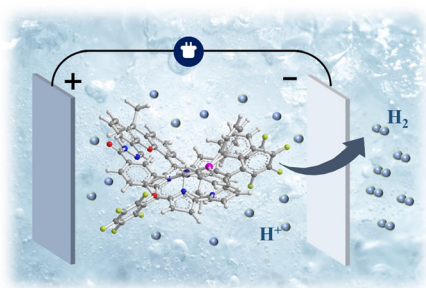
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Synergism between B-N atomic pair for promoting the catalytic cracking of 1,2-dichloroethane

Yaqi Yao, Hongying Zhuo,* Fanan Wang, Guiyue Bi, Jinming Xu,* Xiaofeng Yang and Yanqiang Huang

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Co(III) corroles with pendant amidophenol and amidopyridine as proton-relay arms to facilitate the electrocatalytic hydrogen evolution reaction

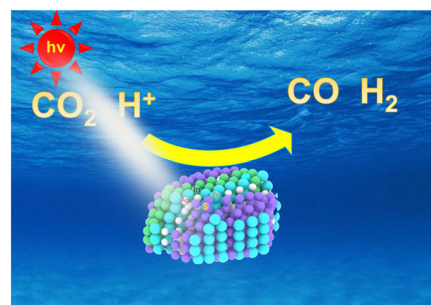
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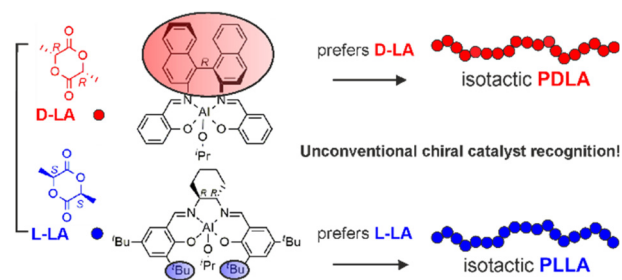
Jing Wang, Shenshen Ouyang, Ye Wang, Xusheng Wang, Xiaohui Ren and Li Shi*



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Ligand coordination controlled by monomer binding: a hint from DFT for stereoselective lactide polymerization

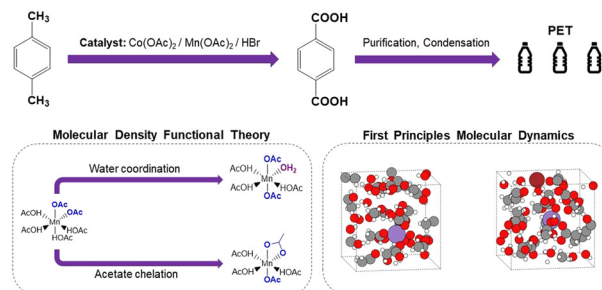
Massimo Christian D'Alterio, Serena Moccia, Yolanda Rusconi, Claudio De Rosa and Giovanni Talarico*



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First principles investigation of manganese catalyst structure and coordination in the *p*-xylene oxidation process

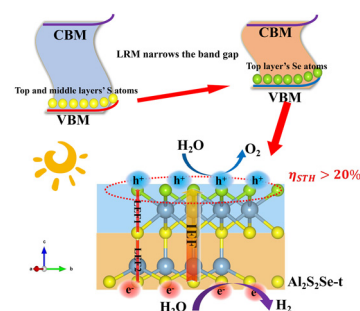
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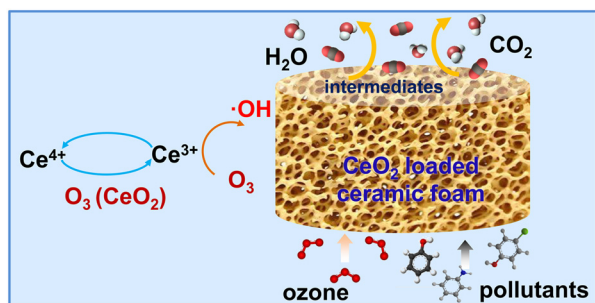
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Layerwise replacement method to achieve high solar-to-hydrogen efficiency for photocatalytic water splitting: a first principles study

Chuye Quan, Shilei Ji, Ruijia Yao, Ming Du, Chen Chen, Xiaoyang He, Ran Cai, Jianping Yang and Xing'ao Li*



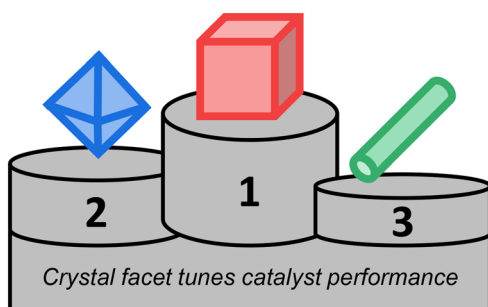
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CeO₂-modified monolithic ceramic foams for efficient catalytic ozonation of refractory organic pollutants in a continuous-flow reactor

Yang Zhao, Wenfei Ding, Xiaochi Chen* and Shuo Chen*

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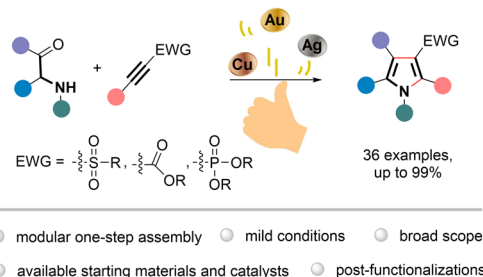


Tuning catalytic performance of platinum single atoms by choosing the shape of cerium dioxide supports

Petrus C. M. Laan, Martijn J. Mekker, Felix J. de Zwart, Alessandro Troglia, Roland Bliem, Kai Zhao, Norbert J. Geels, Bas de Bruin, Gadi Rothenberg,* Joost N. H. Reek and Ning Yan*

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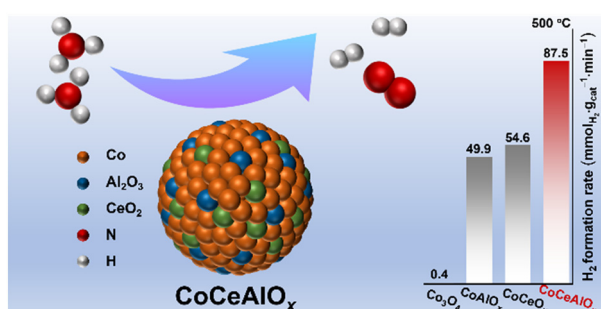
Toss a coin to your alkyne...



Coinage (Au, Ag, Cu) metal-catalyzed (3 + 2) annulation of α -aminoketones and electron-deficient alkynes as a route to 3-EWG-substituted pyrroles

Elena I. Chikunova, Polina F. Kotikova, Dmitry V. Dar'in, Vadim Yu. Kukushkin and Alexey Yu. Dubovtsev*

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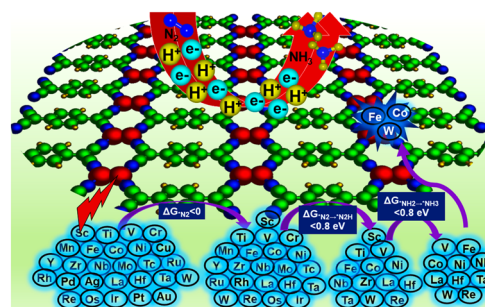


Highly efficient cobalt catalysts promoted by CeO₂-Al₂O₃ for ammonia decomposition

Kai Xu, Na Jiang, Peng Wang, Wei-Wei Wang* and Chun-Jiang Jia*



Anjumun Rasool and Manzoor Ahmad Dar*



Generating knowledge graphs through text mining of catalysis research related literature

The diagram illustrates a workflow for integrating scientific literature and ontologies into a knowledge graph for preformulated queries.

Scientific Literature: Represented by a computer monitor icon with an open book, labeled "scientific literature".

Ontologies: Represented by a folder icon containing chemical structures, labeled "ontologies".

Integration: Arrows from both "scientific literature" and "ontologies" point to a central blue and yellow Python logo, indicating the integration process.

Knowledge Graph: The output is a "knowledge graph" (labeled "knowledge graph" in green). It is a complex network of nodes and edges. Nodes include:

- Hydrophobicity: α , β , γ , δ , ϵ , ζ , η , θ , ι , κ , λ , μ , ν , ξ , π , ρ , σ , τ , υ , ϕ , χ , ψ , ω
- Hydrogen atoms: α , β , γ , δ , ϵ , ζ , η , θ , ι , κ , λ , μ , ν , ξ , π , ρ , σ , τ , υ , ϕ , χ , ψ , ω
- Hydroxyl groups: α , β , γ , δ , ϵ , ζ , η , θ , ι , κ , λ , μ , ν , ξ , π , ρ , σ , τ , υ , ϕ , χ , ψ , ω
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- Hydroxyl groups: α , β , γ , δ , ϵ , ζ , <

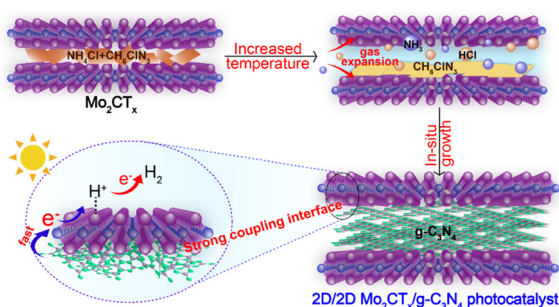
Facile *in situ* construction strategy to deposit Mn_{0.5}Cd_{0.5}S nanoparticles on TiO₂ nanosheets for highly efficient visible light photocatalytic degradation of tetracycline

Morphology dependence of Nb₂O₅-supported cobalt oxide in catalytic toluene oxidation

Figure 1 is a line graph showing Toluene conversion (%) on the y-axis (0 to 100) versus Temperature (°C) on the x-axis (240 to 400). Three catalyst types are compared: Co/Nb₂O₅-Rods (pink squares), Co/Nb₂O₅-Grids (teal circles), and Co/Nb₂O₅-Spherical (purple triangles). The spherical catalyst shows the highest activity, reaching 100% conversion at 380°C. The rods and grids show lower activity, reaching 100% conversion at 400°C. An inset shows a schematic of the catalyst structures: rods (cylindrical), grids (layered), and spherical (aggregated particles).

Temperature (°C)	Co/Nb ₂ O ₅ -Rods (%)	Co/Nb ₂ O ₅ -Grids (%)	Co/Nb ₂ O ₅ -Spherical (%)
240	0	0	0
260	0	0	0
280	0	0	0
300	0	0	0
320	5	5	5
340	10	10	20
360	25	20	60
380	65	40	100
400	100	100	-

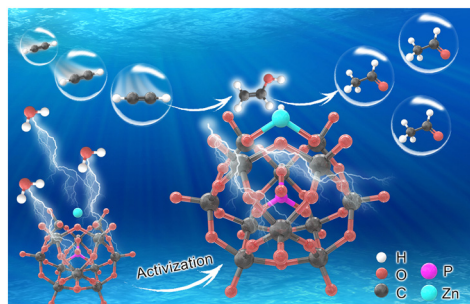
5731



2D/2D $\text{Mo}_2\text{CT}_x/\text{g-C}_3\text{N}_4$ with a strong coupling interface via one-step NH_4Cl -assisted calcination for enhanced photocatalytic hydrogen production

Haiting Zou, Miaomiao Pan, Ping Wang,* Feng Chen, Xuefei Wang and Huogen Yu*

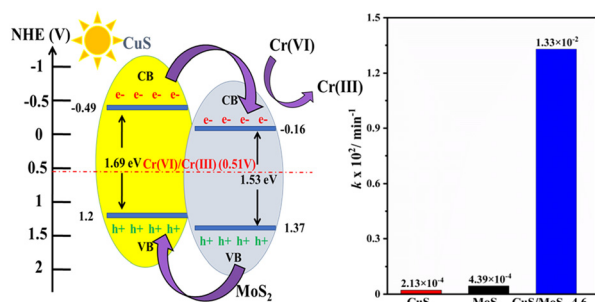
5739



Carbon-supported Zn-HPW ligand catalysts for acetylene hydration

Zhen Chen, Dingjie Luo, Qinqin Wang,* Long Zhou, Yufan Ma, Fangjie Lu* and Bin Dai*

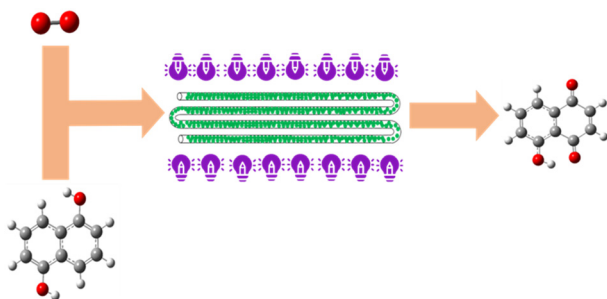
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Construction of visible light active CuS/MoS₂ heterojunctions for heightened photoreduction of Cr(vi)

Aijing Ma,* Zaitian Tan, Wenjie Liu, Xueqian Li, Kaibo Wang, Yiming Zhang, Xuan Jiao, Jiahao Li, Yuanyuan Yang and Feiyan Fu*

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Scalable and green juglone synthesis via heterogeneous photocatalysis in a photomicroreactor

Mohsin Pasha, Yuhan Wang, You Ma, Guozhi Qian, Xiao Xue, Hong Zhang, Yong Yang, Minjing Shang,* Pengfei Zhang and Yuanhai Su*



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Efficient reductive amination of 5-hydroxymethylfurfural by iridium-catalysed transfer hydrogenation

Haoying Liu, Weijun Tang,* Dong Xue, Jianliang Xiao and Chao Wang*

