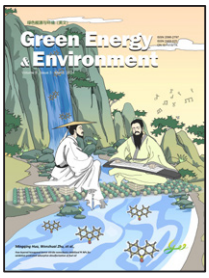
Green Energy & Environment

ISSN 2096-2797 E-ISSN 2468-0257 CN 10-1418/TK Volume 9, Issue 3 (2024.3)



Front Cover

Few-layered hexagonal boron nitride nanosheets stabilized Pt NPs for oxidation promoted adsorptive desulfurization of fuel oil

Peiwen Wu, Xin Song, Linlin Chen, Lianwen He, Yingcheng Wu, Duanjian Tao, Jing He, Chang Deng, Linjie Lu, Yanhong Chao, Mingqing Hua, Wenshuai Zhu**

CONTENTS

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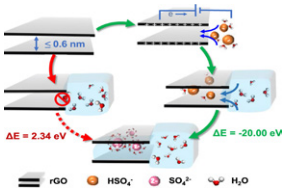
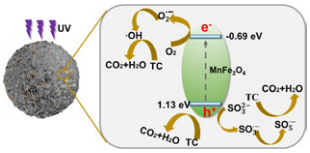
Research papers

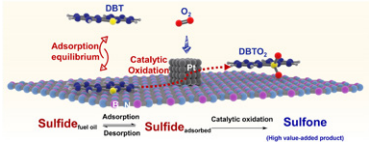
The ionic hydration effect is employed to achieve the wetting of sub-nanochannels, leading to the increased ion diffusion coefficient by ~9.4 times. Both the water stability in the ionic pre-intercalation and water affinity is determined by the water–ions interaction.



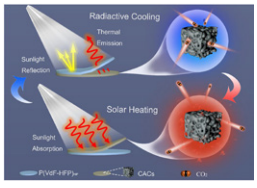
The N-doped biochar matrix loaded with $MnFe_2O_4$ was prepared through a simple hydrothermal method, and was applied to remove tetracycline (TC) simultaneously with the synergy of adsorption and photocatalysis.



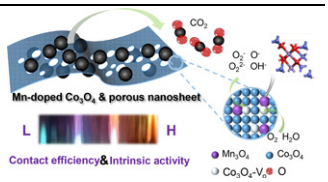
A few-layered hexagonal boron nitride nanosheets stabilized platinum nanoparticles (Pt/h-BNNS) is engineered for oxidation-promoted adsorptive desulfurization (OPADS) of fuel oil. The strong interactions between Pt NPs and h-BNNS induce deep desulfurization of fuel oil.



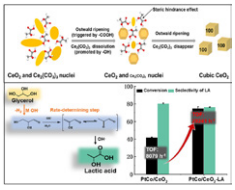
Temperature swing system with radiative cooling and solar heating is developed for energy-efficient CO_2 adsorption. The work may inspire the development of new temperature swing procedures with little energy consumption.



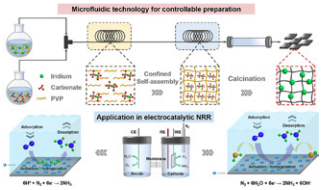
Mn_xCo_y catalysts were synthesized using a simple MgO-template substitution method. Specifically, the doping of Mn enhances the contact efficiency and intrinsic activity, resulting in excellent catalytic performance in soot combustion.



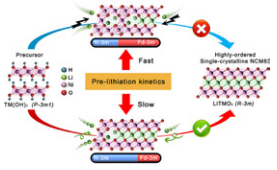
Cubic CeO_2 supported PtCo catalysts, synthesized by LA-assisted method, exhibit a record high activity (TOF: 29,241 h^{-1}) and Vö-dependent synergism for C–H bond activation of glycerol at 200 °C.



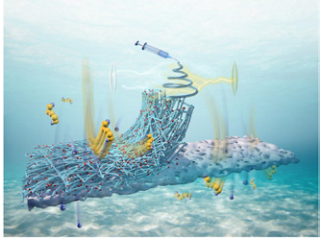
In this work, the microfluidic technology is developed to in-situ fabricate enriched iridium nanodots/carbon architecture as promising electrode materials for electrocatalytic NRR with high ammonia yield and faradic efficiency in acidic and alkaline conditions.



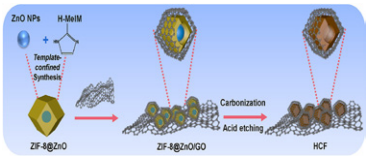
The slow pre-lithiation kinetics is preferred to the fast one because it can effectively promote the transformation of intermediate to highly-ordered layered Ni-rich cathode by improving the proportion of the layered phase in the intermediate.



The self-supporting high-entropy metal oxides grown on carbon nanofibers as an interlayer are prepared by an electrospinning method. It considerably relieves the shuttle effect of lithium polysulfides and enhances the electrochemical performance of lithium sulfur batteries through the simultaneous impacts of hierarchical physical sieve and high-entropy induced chemisorption.

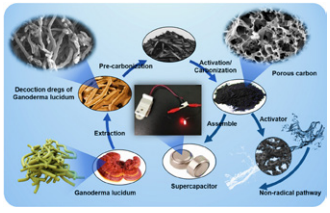


This study presents an effective strategy to promote LIC anode kinetics, by designing an N-doped hierarchical carbon framework (HCF) material, which is composed of 0D carbon nanocages bridged with 2D graphene network. LIC pouch-cell based on HCF anode and active HCF (a-HCF) cathode can provide high energy density and superior power density, as well as remarkable cycling life.



Self-templating synthesis of biomass-based porous carbon nanotubes for energy storage and catalytic degradation applications

Self-template waste Ganoderma lucidum residue-derived carbon nanotubes (ST-DDLGCs) with hierarchical porous structures were synthesized. ST-DDLGCs exhibited significant capacity for PMS activation and superior performance as supercapacitor electrodes. The mechanisms of catalytic oxidation and charge storage was clarified.



Corrigendum

Corrigendum to 'Increasing the greenness of an organic acid through deep eutectic solvation and further polymerisation'