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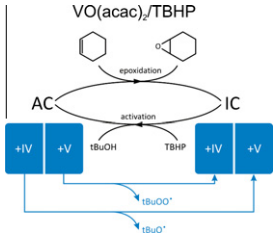
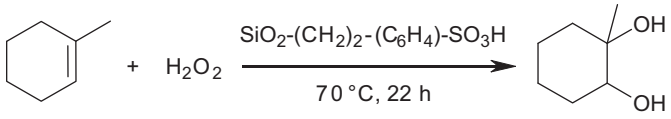
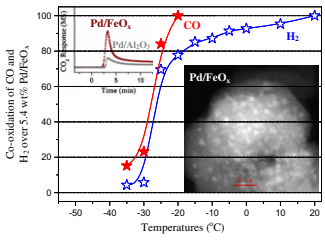
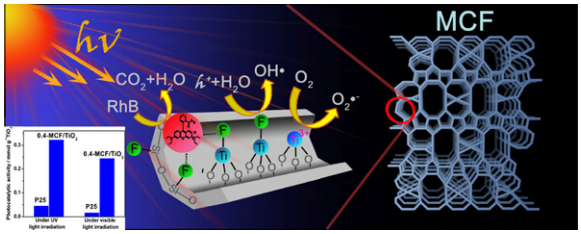




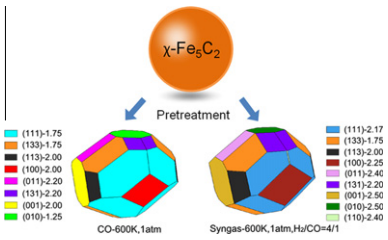
Supported sulfonic acids efficiently catalyzed the 1-methylcyclohexene dihydroxylation with aqueous hydrogen peroxide, without the use of additional solvents, under mild condition. Results of catalytic efficiency and spectroscopy data allowed to advance some hypothesis on the reaction mechanism.



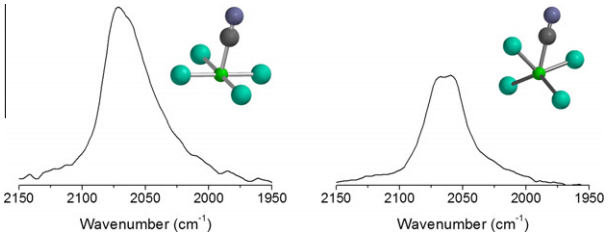
Co-oxidation of CO and H_2 or oxidation of H_2 in the presence of CO was achieved at low temperatures (0–20 °C) over single-component catalysts (Pd/FeO_x) at a space velocity of 15,000 ml g_{cat}^{-1} h^{-1}. Based on a systematical characterization study, it is speculated that highly dispersed Pd nano particles and FeO_x support supplying active oxygen which is involved in oxidations are the key factors for excellent performance of Pd/FeO_x for co-oxidation of CO and H_2 at low temperatures.



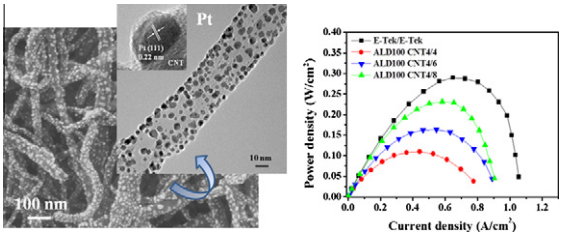
NH_4F was used as hydrophobic modifier to synthesize the superhydrophobic mesocellular foams loaded with TiO_2 photocatalyst, which could be considered as an extractant for organics and a high-performance photocatalyst.



Ab initio simulations demonstrate that the surface facetting of the most common iron carbide observed during Fischer–Tropsch synthesis depends on the gaseous environment.



The absorption coefficient of CO adsorbed on surface Co atoms in MoS_2 crystallites reflects the local structure of the adsorbing sites.



Pt nanoparticles were deposited on CNTs by ALD. The size and loading of Pt could be well controlled. The specific power density of homemade MEA was eleven times higher than that of commercial one.