



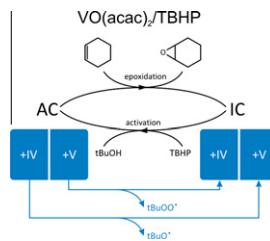
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Contents

Mechanistic insight into the cyclohexene epoxidation with $\text{VO}(\text{acac})_2$ and *tert*-butyl hydroperoxide

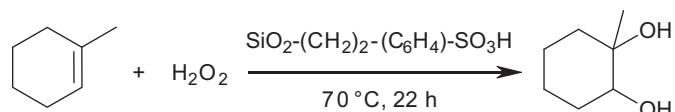
pp 1–18

Matthias Vandichel, Karen Leus, Pascal Van Der Voort, Michel Waroquier*, Veronique Van Speybroeck*

**Oxidation of alkenes to 1,2-diols: FT-IR and UV studies of silica-supported sulfonic acid catalysts and their interaction with H_2O and H_2O_2**

pp 19–28

Raimondo Maggi*, Gianmario Martra, Calogero Giancarlo Piscopo, Gabriele Alberto, Giovanni Sartori

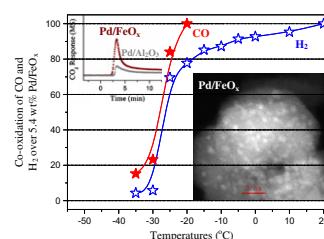


Supported sulfonic acids efficiently catalyzed the 1-methylcyclohexene dihydroxylation with aqueous hydrogen peroxide, without the use of additional solvents, under mild condition. Results of catalytic efficiency and spectroscopy data allowed to advance some hypothesis on the reaction mechanism.

Catalytic co-oxidation of CO and H_2 over FeO_x -supported Pd catalyst at low temperatures

pp 29–36

Lequan Liu, Botao Qiao, Yude He, Feng Zhou, Benqun Yang, Youquan Deng*

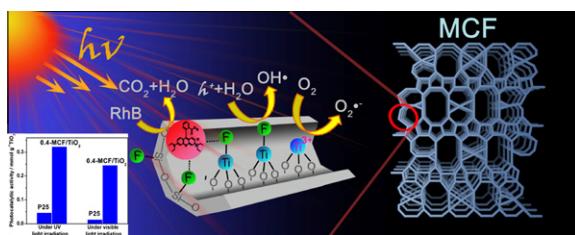


Co-oxidation of CO and H_2 or oxidation of H_2 in the presence of CO was achieved at low temperatures (0–20 °C) over single-component catalysts (Pd/FeO_x) at a space velocity of 15,000 ml g_{cat}⁻¹ h⁻¹. Based on a systematical characterization study, it is speculated that highly dispersed Pd nano particles 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.

Super-hydrophobic fluorination mesoporous MCF/TiO₂ composite as a high-performance photocatalyst

pp 37–46

Mingyang Xing, Dianyu Qi, Jinlong Zhang*, Feng Chen, Baozhu Tian, Segomotsu Bagwas, Masakazu Anpo

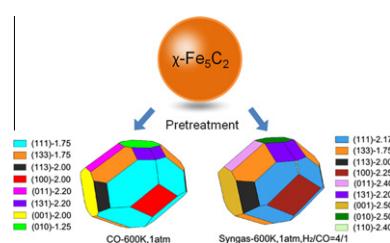


NH₄F was used as hydrophobic modifier to synthesize the superhydrophobic mesocellular foams loaded with TiO₂ photocatalyst, which could be considered as an extractant for organics and a high-performance photocatalyst.

Surface morphology of Hägg iron carbide (χ -Fe₅C₂) from *ab initio* atomistic thermodynamics

pp 47–53

Shu Zhao, Xing-Wu Liu, Chun-Fang Huo, Yong-Wang Li, Jianguo Wang, Haijun Jiao*

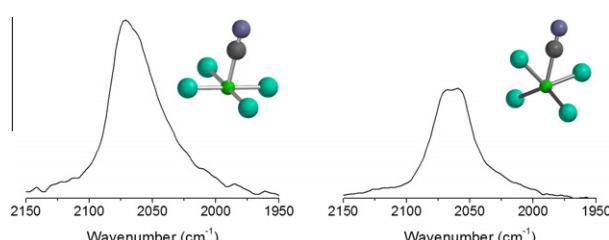


Ab initio simulations demonstrate that the surface facetting of the most common iron carbide observed during Fischer–Tropsch synthesis depends on the gaseous environment.

Relationship between the hydrodesulfurization of thiophene, dibenzothiophene, and 4,6-dimethyl dibenzothiophene and the local structure of Co in Co–Mo–S sites: Infrared study of adsorbed CO

pp 54–62

Perla Castillo-Villalón, Jorge Ramirez*, Rocío Castañeda

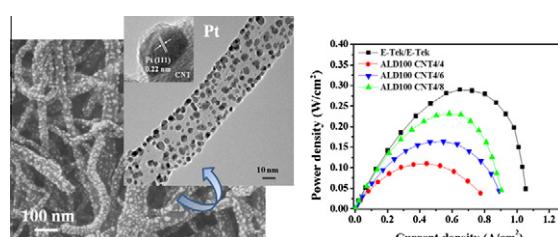


The absorption coefficient of CO adsorbed on surface Co atoms in MoS₂ crystallites reflects the local structure of the adsorbing sites.

Fabrication of catalyst by atomic layer deposition for high specific power density proton exchange membrane fuel cells

pp 63–68

Yang-Chih Hsueh, Chih-Chieh Wang, Chi-Chung Kei, Yu-Hung Lin, Chueh Liu, Tsong-Pyng Perng*



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.

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