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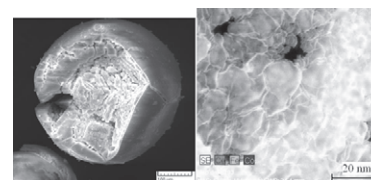
Articles

**Samuel P.D. Marques, Anderson L. Pinheiro,
Tiago P. Braga, Antoninho Valentini,
Josue M. Filho, Alcineia C. Oliveira**

- ▶ Nanocasted $\text{CoFe}_2\text{O}_4\text{Co}_2\text{O}_3$ and CeO_2 oxides. ▶ Solids highly active for styrene production.
- ▶ Replication of the mold and spherical morphology.

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Nanocasted oxides for oxidative dehydrogenation of ethylbenzene utilizing CO_2 as soft oxidant

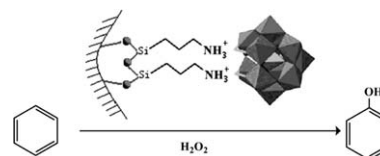


**Ali Nemati Kharat, Sayedreza Moosavikia,
Bahareh Tamaddoni Jahromi, Alireza Badiei**

- ▶ In this report we synthesized Keggin type vanadium substituted molybdophosphoric acid supported on amine functionalized SBA-15. ▶ We investigated this catalyst on direct hydroxylation of benzene to phenol in liquid phase. ▶ Under optimized conditions 20% conversion of benzene and 95% selectivity to phenol was achieved.

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Liquid phase hydroxylation of benzene to phenol over vanadium substituted Keggin anion supported on amine functionalized SBA-15



Nader Ghaffari Khaligh, Farhad Shirini

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Preparation, characterization and use of poly(4-vinylpyridinium) hydrogen sulfate salt as an eco-benign, efficient and reusable solid acid catalyst for the chemoselective 1,1-diacetate protection and deprotection of aldehydes

- ▶ Introducing the new catalyst (as solid acid) for organic transformations. ▶ Introducing an efficient new method for protection of aldehydes. ▶ Generality of the method, high yields and very short reaction times.
- ▶ Application of solventfree conditions in the reaction.

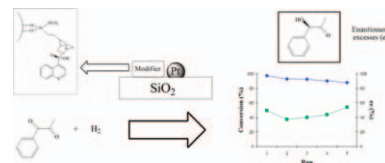


Cristian H. Campos, Marcelo Oportus, Cecilia Torres, Claudia Urbina, José L.G. Fierro, Patricio Reyes

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Enantioselective hydrogenation of 1-phenylpropane-1,2-dione on immobilised cinchonidine Pt/SiO₂ catalysts

► SiO₂ supports were synthesized by immobilised modified cinchonidine. ► Catalysts were prepared at 1% mass Pt supported on modified SiO₂. ► The catalysts are active in enantioselective hydrogenation of 1-phenylpropane-1,2-dione. ► The most enantioselective catalyst is used in recycling test. ► All the recycling test show loss of enantioselectivity and activity.

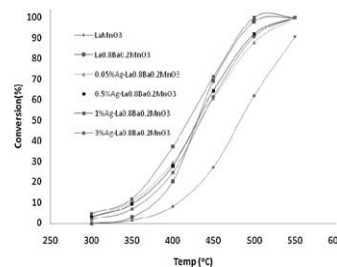


Suresh Kumar, Y. Teraoka, Amish G. Joshi, S. Rayalu, Nitin Labhsetwar

Journal of Molecular Catalysis A: Chemical 348 (2011) 42

Ag promoted La_{0.8}Ba_{0.2}MnO₃ type perovskite catalyst for N₂O decomposition in the presence of O₂, NO and H₂O

► Catalytic activity of LaMnO₃ has been improved by Ba and Ag promotion. ► Ag addition alters the redox properties of perovskite, which is responsible for improved catalytic activity. ► Altered valance states of Mn has been confirmed by XPS studies and corroborated by TPD analysis. ► 1 wt% Ag promoted La_{0.8}Ba_{0.2}MnO₃ shows 100% N₂O conversion at 550 °C with a reaction rate of 0.028 mmol g⁻¹ min⁻¹.

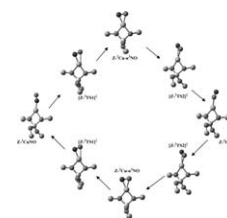


Rodolfo Izquierdo, Leonardo J. Rodríguez, Rafael Añez, Aníbal Sierraalta

Journal of Molecular Catalysis A: Chemical 348 (2011) 55

Direct catalytic decomposition of NO with Cu-ZSM-5: A DFT-ONIOM study

► The use of ONIOM methodologies makes possible a combined quantum mechanism/molecular mechanism calculations in system with hundreds of atoms. ► The DFT calculations provide new insights in the direct DeNO_x mechanisms by Cu-ZSM5 systems. ► The species [Cu-κ²NO]⁺ account for the linking species between the twopath mechanism.

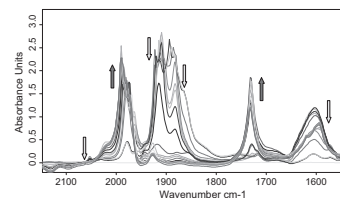


Samuel Jali, Holger B. Friedrich, Gerrit R. Julius

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The effect of Mo(CO)₆ as a co-catalyst in the carbonylation of methanol to methyl formate catalyzed by potassium methoxide under CO, syngas and H₂ atmospheres. HP-IR observation of the methoxycarbonyl intermediate of Mo(CO)₆

► The Mo(CO)₆ catalyzed production of methyl formate from CH₃OH, syngas, CO, H₂ and KOCH₃ was studied. ► HP-IR studies under CO, syngas, H₂ and N₂ showed that the mechanism goes via [Mo(CO)₅(COOCH₃)]⁻. ► [Mo(CO)₅(COOCH₃)]⁻ is then protonated by methanol to eliminate methyl formate. ► HP-IR results under H₂ and N₂ showed formation of μ-HMo₂(CO)₁₀⁻ as [Mo(CO)₅(COOCH₃)]⁻ diminishes. ► The role of methanol in the protonation of the methoxycarbonyl adduct is significant.

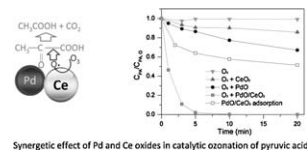


Weiwei Li, Zhimin Qiang, Tao Zhang, Xiaolei Bao, Xu Zhao

Journal of Molecular Catalysis A: Chemical 348 (2011) 70

Efficient degradation of pyruvic acid in water by catalytic ozonation with PdO/CeO₂

► PdO/CeO₂ is an effective catalyst for ozonation of pyruvic acid in water. ► Surface Ce³⁺/Pd²⁺ molar ratio and metal charging states dominate catalyst activity. ► PdO/CeO₂ catalysis is ascribed to the synergetic effect of Pd and Ce.

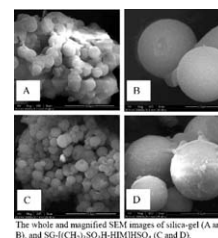


Jinmei Miao, Hui Wan, Yanbing Shao, Guofeng Guan, Bin Xu

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Acetalization of carbonyl compounds catalyzed by acidic ionic liquid immobilized on silica gel

► Immobilized [(CH₂)₃SO₃H-HIM]HSO₄ prepared by using TEOS as silica source was prepared. ► SG-[(CH₂)₃SO₃H-HIM]HSO₄ exhibited high catalytic activity for acetalization. ► SG-[(CH₂)₃SO₃H-HIM]HSO₄ could be recycled easily and exhibited excellent reusability.

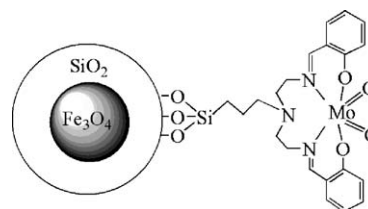


M. Masteri-Farahani, N. Tayyebi

Journal of Molecular Catalysis A: Chemical 348 (2011) 83

A new magnetically recoverable nanocatalyst for epoxidation of olefins

► Silica coated magnetite nanoparticles were modified with a Schiff base ligand. ► Next reaction with MoO₂(acac)₂ afforded MoO₂salpr/SCMNPs. ► The prepared MoO₂salpr/SCMNPs was active in the epoxidation of olefins.

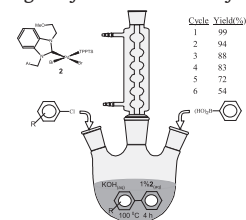


Hayati Türkmen, Levent Pelit, Bekir Çetinkaya

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Water-soluble *cis*-[(NHC)PdBr₂(TPPTS)] catalysts and their applications in Suzuki–Miyaura coupling of aryl chlorides

► Water soluble complexes were prepared. ► These complexes were active in the Suzuki cross-coupling reactions. ► Makes the catalyst reusable. ► This process is ecologically and economically acceptable.

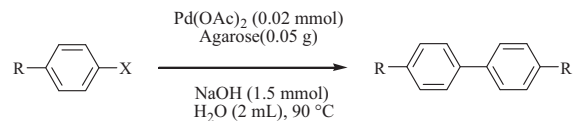


Habib Firouzabadi, Nasser Iranpoor, Faezeh Kazemi

Journal of Molecular Catalysis A: Chemical 348 (2011) 94

Carbon-carbon bond formation via homocoupling reaction of substrates with a broad diversity in water using Pd(OAc)₂ and agarose hydrogel as a bioorganic ligand, support and reductant

- ▶ Agarose was used as a reductant for Pd(II) salt.
- ▶ Agarose was used as a support for palladium particles.
- ▶ Homocoupling reaction of aryl halides was reported.
- ▶ The reaction was conducted in aqueous media.
- ▶ The reaction was conducted under ligand- and amine-free conditions.

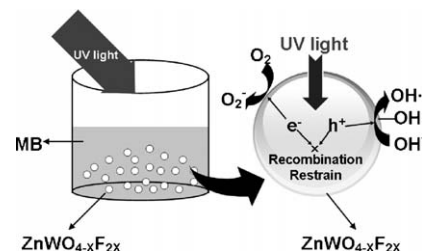


Guangli Huang, Rui Shi, Yongfa Zhu

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Photocatalytic activity and photoelectric performance enhancement for ZnWO₄ by fluorine substitution

- ▶ The formation of fluorine substitution can be attained by a two step process.
- ▶ Comparing with ZnWO₄ the activity of ZnWO_{4-x}F_{2x} almost doubled.
- ▶ Enhanced activity was attributed to higher density hydroxyl of ZnWO_{4-x}F_{2x}.
- ▶ ZnWO_{4-x}F_{2x} possessed higher donor density and efficiency of charge separation.

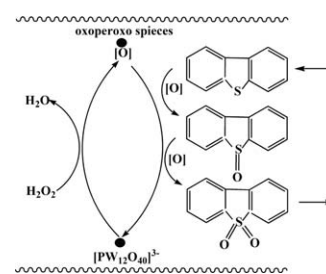


Baoshan Li, Zhenxing Liu, Chunying Han, Jianjun Liu, Shengli Zuo, Zhiyuan Zhou, Xinmei Pang

Journal of Molecular Catalysis A: Chemical 348 (2011) 106

Preparation, characterization and catalytic performance of the silica pillared clay incorporated with phosphotungstic acid using different surfactants as template

- ▶ HPW heteropoly acid was encapsulated into the mesoporous silica pillared clay.
- ▶ Surfactant have a significant impact in the formation of the gallery pore.
- ▶ The catalysts exhibit high catalytic activity in deep ODS of model oil.
- ▶ The catalysts exhibit good reusability.



Bin Zhao, Feng Chen, Yanchao Jiao, Hongyun Yang, Jinlong Zhang

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Ag⁰-loaded brookite/anatase composite with enhanced photocatalytic performance towards the degradation of methyl orange

- ▶ Ag⁰-loaded brookite/anatase TiO₂ with uniform Ag⁰ size distribution was prepared.
- ▶ 2.0% Ag⁰-loaded brookite/anatase TiO₂ has the highest photocatalytic reactivity.
- ▶ Hetero-junction in brookite/anatase composite benefits the charge separation.
- ▶ Schottky barrier between Ag⁰ and TiO₂ further improved the charge separation.

