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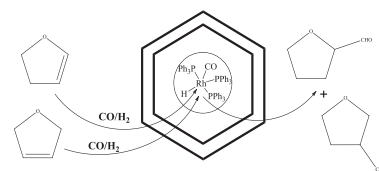
Articles

Munir D. Khokhar, Ram S. Shukla, Raksh V. Jasra

Journal of Molecular Catalysis A: Chemical 400 (2015) 1

Hydroformylation of dihydrofurans catalyzed by rhodium complex encapsulated hexagonal mesoporous silica

• $\text{HRh}(\text{CO})(\text{PPh}_3)_3$ -HMS catalysed hydroformylation of 2,3- and 2,5-dihydrofurans. • Conversion of 2,3-DHF was 98% with 89% selectivity of THF-2-carbaldehyde. • Conversion of 2,5-DHF was 90% with 72% selectivity of THF-3-carbaldehyde. • Conversion and selectivity depended on the catalyst amount and total pressure. • Catalyst was effectively recycled for both dihydrofurans.

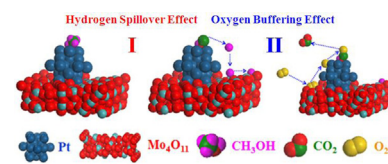


Fan Yang, Fan Li, Yan Wang, Xin Chen, Dingguo Xia, Jingbo Liu

Journal of Molecular Catalysis A: Chemical 400 (2015) 7

Enhanced electrocatalytic performance for methanol oxidation with a Magnéli phase molybdenum oxide/Pt-black composite

• Crystallised Magnéli phase Mo_4O_{11} used as a co-catalyst support to enhance MOR. • Multiple Mo valence states coexist in Mo_4O_{11} . • These promote hydrogen spillover and oxygen buffering in the Pt/ Mo_4O_{11} catalyst. • The catalyst shows improved poisoning tolerance and electrocatalytic activity.



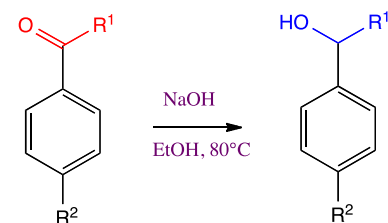
Schematic illustration of the synergistic effect of Pt/ Mo_4O_{11} catalysing methanol oxidation reaction (MOR), including the hydrogen spillover effect and the oxygen buffering effect.

Dong Wang, Christophe Deraedt, Jaime Ruiz, Didier Astruc

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Sodium hydroxide-catalyzed transfer hydrogenation of carbonyl compounds and nitroarenes using ethanol or isopropanol as both solvent and hydrogen donor

• Sodium hydroxide catalyze aryl ketone hydrogenation in ethanol at 80°C. • Sodium hydroxide reduces nitroarene to azoxyarene and azoarene in alcohols. • Selectivity in nitroarene reduction is strongly dependent on the alcohol structure.

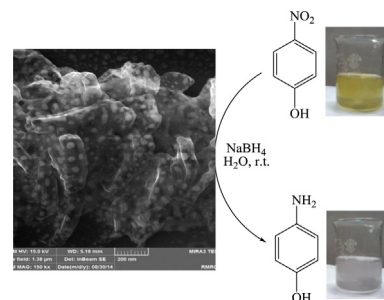


Mahmoud Nasrollahzadeh, S. Mohammad Sajadi, Akbar Rostami-Vartooni, Mojtaba Bagherzadeh, Reza Safari

Journal of Molecular Catalysis A: Chemical 400 (2015) 22

Immobilization of copper nanoparticles on perlite: Green synthesis, characterization and catalytic activity on aqueous reduction of 4-nitrophenol

- Green synthesis of Cu NPs/perlite composite.
- Catalytic reduction of 4-nitrophenol to 4-aminophenol.
- Catalyst was characterized using XRF, XRD, SEM, EDS, TEM, TG-DTA, BET, and FT-IR.
- Catalyst can be easily recovered and reused.

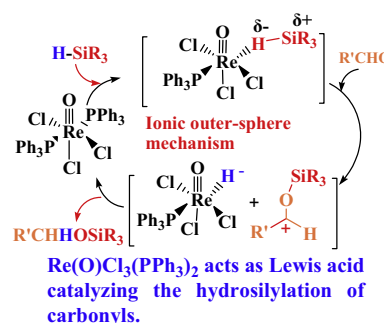


Liangfang Huang, Wenmin Wang, Haiyan Wei

Journal of Molecular Catalysis A: Chemical 400 (2015) 31

A computational study on high-valent mono-oxo-rhenium(V) complex-catalyzed hydrosilylation of carbonyls: What a difference an oxo ligand makes

- Re(O)Cl₃(PPh₃)₂ catalyzed the hydrosilylation favoring an ionic pathway.
- The [2 + 2] addition pathway is 11.1 kcal/mol higher than the ionic pathway.
- The σ-bond metathesis pathway is 7.4 kcal/mol higher than the ionic pathway.

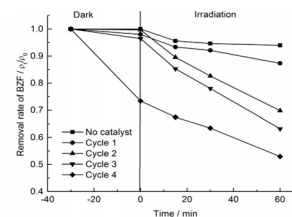


Meijie Ren, Fritz H. Frimmel, Gudrun Abbt-Braun

Journal of Molecular Catalysis A: Chemical 400 (2015) 42

Multi-cycle photocatalytic degradation of bezafibrate by a cast polyvinyl alcohol/titanium dioxide (PVA/TiO₂) hybrid film

- PVA/TiO₂ photocatalyst provided a highly active and recyclable catalyst for water purification.
- The photocatalytic degradation efficiency increased with the increase of reuse cycle.
- Technically the hybrid film was fairly stable under the long-term irradiation of the work.

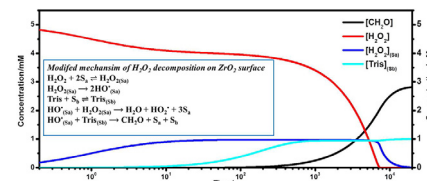


Miao Yang, Mats Jonsson

Journal of Molecular Catalysis A: Chemical 400 (2015) 49

Surface reactivity of hydroxyl radicals formed upon catalytic decomposition of H₂O₂ on ZrO₂

- Competition between H₂O₂ and Tris for surfacebound HO• was quantified.
- Competition between O₂ and H₂O₂ for •CH₂OH (precursor for CH₂O) was revealed.
- Site-specific mechanism of H₂O₂ decomposition on the surface of ZrO₂ was proposed.
- Numerical simulations reproduce the experimental results.



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