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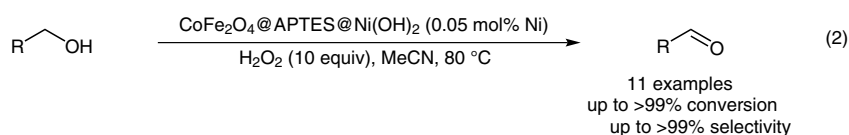
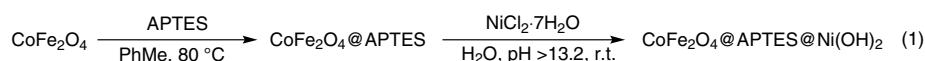
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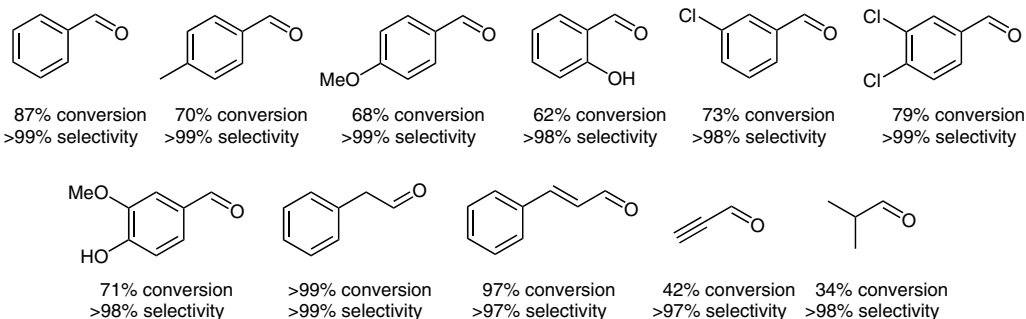
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Oxidation of Alcohols Using $\text{CoFe}_2\text{O}_4@\text{APTES}@\text{Ni}(\text{OH})_2$



Results:



Significance: Nickel hydroxide coated nanocobalt ferrite [$\text{CoFe}_2\text{O}_4@\text{APTES}@\text{Ni}(\text{OH})_2$] was prepared by the reaction of CoFe_2O_4 with 3-aminopropyltriethoxysilane (APTES) followed by treatment with $\text{NiCl}_2 \cdot 7\text{H}_2\text{O}$ in aqueous alkaline (eq. 1). $\text{CoFe}_2\text{O}_4@\text{APTES}@\text{Ni}(\text{OH})_2$ catalyzed the oxidation of alcohols with hydrogen peroxide to give the corresponding aldehydes in up to >99% conversion with up to >99% selectivity (eq. 2).

Comment: $\text{CoFe}_2\text{O}_4@\text{APTES}@\text{Ni}(\text{OH})_2$ was characterized by AAS, FT-IR, UV/Vis, XRD, TEM, FESEM, N_2 adsorption, and VSM analyses. The catalyst was recovered by magnetic separation and reused four times without significant loss of catalytic activity.