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## Oxidation of Alcohols Using CoFe<sub>2</sub>O<sub>4</sub>@APTES@Ni(OH)<sub>2</sub>



**Significance:** Nickel hydroxide coated nanocobalt ferrite [CoFe<sub>2</sub>O<sub>4</sub>@APTES@Ni(OH)<sub>2</sub>] was prepared by the reaction of CoFe<sub>2</sub>O<sub>4</sub> with 3-aminopropyltriethoxysilane (APTES) followed by treatment with NiCl<sub>2</sub>·7H<sub>2</sub>O in aqueous alkaline (eq. 1). CoFe<sub>2</sub>O<sub>4</sub>@APTES@Ni(OH)<sub>2</sub> 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:** CoFe<sub>2</sub>O<sub>4</sub>@APTES@Ni(OH)<sub>2</sub> was characterized by AAS, FT-IR, UV/Vis, XRD, TEM, FESEM, N<sub>2</sub> adsorption, and VSM analyses. The catalyst was recovered by magnetic separation and reused four times without significant loss of catalytic activity.

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## Category

Polymer-Supported Synthesis

## Key words

nickel hydroxide

nanocobalt ferrite

oxidation

alcohols