

Oxidative Cleavage and Ammoxidation of C–S Bonds by Cobalt/N-Doped Carbon Catalyst

Category

Polymer-Supported Synthesis

Key words

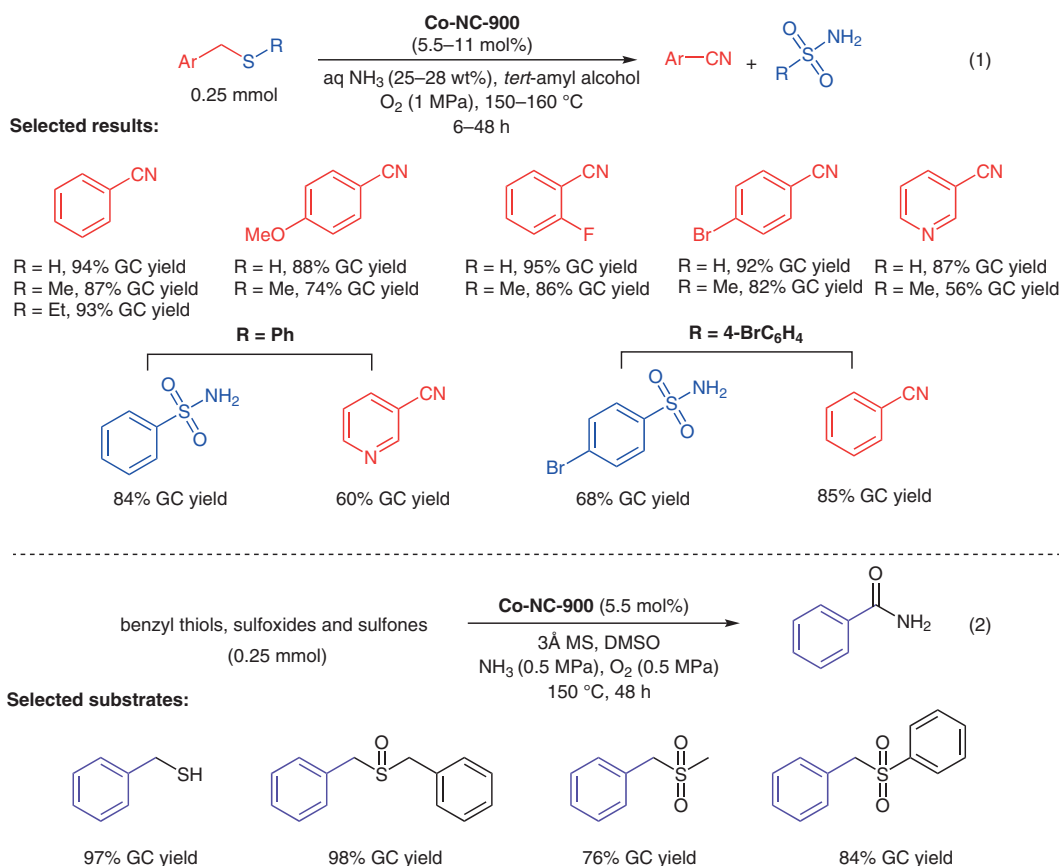
cobalt catalysis

oxidative cleavage

ammoxidation

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Significance: A cobalt/N-doped carbon catalyst (**Co-NC-900**) was found to promote the oxidative cleavage of thiols, sulfides and aryl benzyl sulfides with aqueous NH₃ as the nitrogen source under O₂ to give the corresponding nitriles in $\leq 95\%$ GC yield (eq. 1). This catalytic system also promoted the ammoxidation of benzyl thiols, sulfoxides, and sulfones with NH₃ to give the corresponding benzamide in up to 98% GC yield (eq. 2).

Comment: The authors have previously reported the preparation of **Co-NC-900** and its application to the aerobic oxidative successive C–C bond cleavage of alcohols to ester (*Angew. Chem. Int. Ed.* **2020**, *59*, 19268). In the oxidative cleavage reaction of phenylmethanethiol, the catalyst was recovered by filtration and reused five times without significant loss of its catalytic activity.