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 $N an olayered \ Cobalt-Molyb denum \ Sulphides \ (Co-Mo-S) \ Catalyse \ Borrowing \ Hydrogen \ C-S \ Bond \ Formation \ Reactions \ of \ Thiols \ or \ H_2S \ with \ Alcohols$ 

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## Cobalt Molybdenum Sulfide-Catalyzed S-Alkylation of Thiols or H<sub>2</sub>S with Alcohols

**Significance:** Nanolayered cobalt–molybdenum sulfide (Co–Mo–S) catalyzed the alkylation of thiols with alcohols to give the corresponding thioethers in ≤96% yield (eq. 1). Co–Mo–S also catalyzed the reaction of benzyl alcohols with hydrogen sulfide to give symmetrical thioethers (eq. 2).

**Comment:** The authors previously reported the preparation of Co–Mo–S and its applications in the hydrogenation of nitroarenes and quinolines (*ACS Catal.* **2017**, *7*, 2698; *ACS Catal.* **2018**, *8*, 4545). In the alkylation of benzenethiol with benzyl alcohol, the catalyst was recovered and reused five times with a gradual loss of its catalytic activity.

Category

Polymer-Supported Synthesis

## Key words

cobalt catalysis

molybdenum catalysis

alkylation

thiols

alcohols

thioethers



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