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Bifunctional Metal–Organic Layer with Organic Dyes and Iron Centers for Synergistic Photoredox Catalysis


Photocatalytic Functionalization of Alkenes with a Metal–Organic Layer Containing Eosin Y and Iron

Significance: A metal–organic layer (MOL) containing eosin Y and Fe-TPY ligands (Hf-EY-Fe), prepared according to equation 1, catalyzed the trifluoromethylative amination (eq. 2), hydroxylation (eq. 3), or chlorination (eq. 4) of alkenes to give the corresponding products in yields of up to 95%.

Comment: Hf-EY-Fe was characterized by means of ICP-MS, TEM, AFM, HRTEM, PXRD, UV–Vis, fluorescence, XANES, XPS, and EXAFS analyses. In the trifluoromethylative chlorination of 7-bromohept-1-ene with trifluoromethanesulfonyl chloride, the catalyst was recovered and reused four times without significant loss of its catalytic activity.

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SYNFACTS 02062021, 17(06), 0671 Published online: 18.05.2021
DOI: 10.1055/s-0040-1720496; Reg-No.: Y05121SF

Category
Polymer-Supported Synthesis
Key words
photocatalysis
alkenes
trifluoromethylation

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