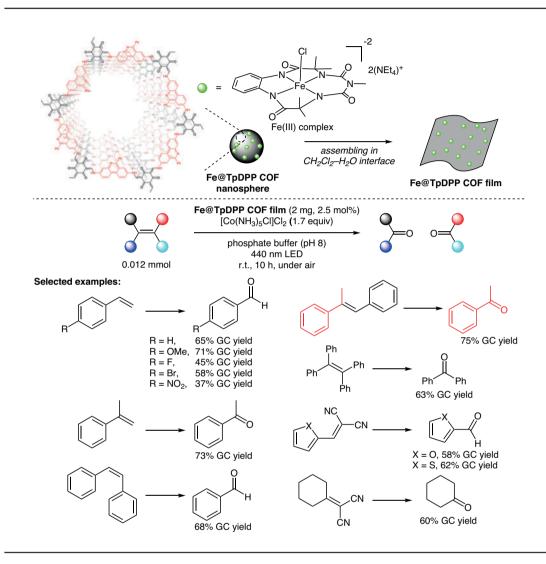
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Enhanced Alkene Oxidative Cleavage in Water via Photoexcited Fe<sup>IV</sup> Species within Covalent Organic Framework Thin Films Reference *Angew. Chem. Int. Ed.* **2024**, *63*, e202412122, DOI: 10.1002/anie.202412122

## Oxidative Cleavage of Alkenes Promoted by a COF-Supported Fe Complex under Photoirradiation



**Significance:** Fe@TpDPP COF, where an Fe(III) complex was supported on the nanospheric COF, was reassembled to give Fe@TpDPP COF film. The latter catalyzed the aerobic oxidative cleavage of alkenes in the presence of [Co(NH<sub>3</sub>)<sub>5</sub>Cl]Cl<sub>2</sub> under visible-light irradiation to give the corresponding aldehydes and ketones in up to 75% GC yield.

Comment: The authors previously reported the preparation of Fe@TpDPP COF film and its application for photoinduced epoxidation of alkenes (J. Am. Chem. Soc. 2023, 145, 18855). In the reaction of styrene, Fe@TpDPP COF film was recovered by centrifugation and reused three times without a significant loss of its catalytic activity.

Category

Polymer-Supported Synthesis

## **Key words**

oxidative cleavage alkenes nanofilms iron catalysis photoirradiation

