P. T. PARVATKAR, S. KANDAMBETH, A. C. SHAIKH, I. NADINOV, J. YIN, V. S. KALE, G. HEALING, A.-H. EMWAS, O. SHEKHAH, H. N. ALSHAREEF, O. F. MOHAMMED, M. EDDAOUDI* (KING ABDULLAH UNIVERSITY OF SCIENCE AND TECHNOLOGY (KAUST), THUWAL, KINGDOM OF SAUDI ARABIA)

A Tailored COF for Visible-Light Photosynthesis of 2,3-Dihydrobenzofurans
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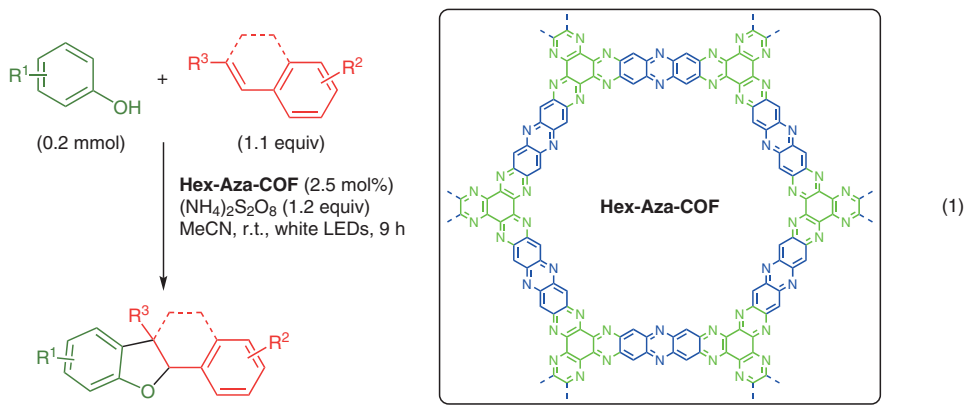
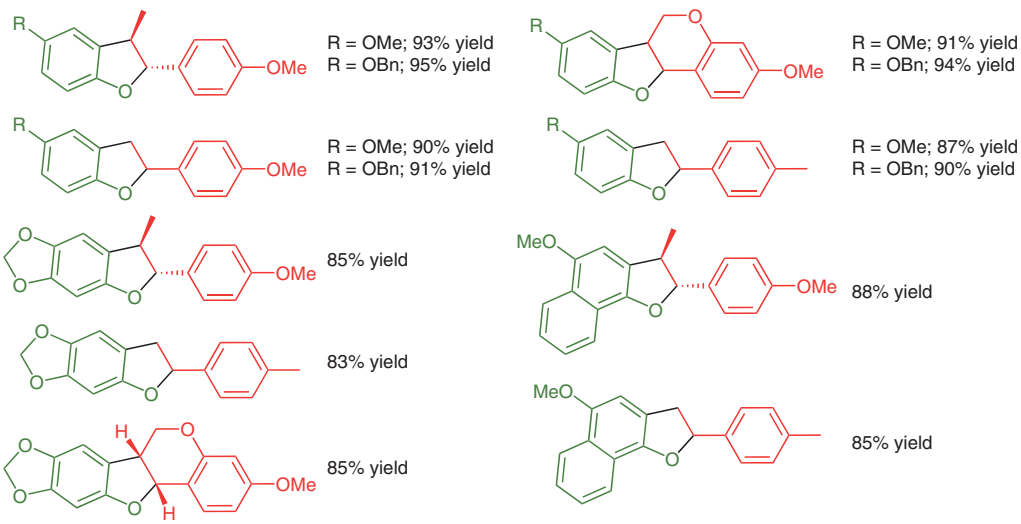
Oxidative [3+2] Cycloaddition of Phenols with Styrenes Using a Photocatalytic COF



(1)

Results:



Significance: A covalent organic framework containing hexaazatriphenylene and phenazine units (**Hex-Aza-COF**) catalyzed the oxidative [3+2] cycloaddition of phenols and styrenes in the presence of $(NH_4)_2S_2O_8$ under white LEDs irradiation to afford the corresponding 2-aryl-2,3-dihydrobenzofurans in up to 95% yield (eq. 1).

Comment: In the oxidative [3+2] cycloaddition of 4-methoxyphenol and *trans*-*p*-methoxypropenylbenzene, **Hexa-Aza-COF** was recovered by centrifugation and reused four times without significant loss of its catalytic activity. The authors have previously reported the preparation of **Hex-Aza-COF** and its application as an electrode (*Adv. Energy Mater.* **2020**, *10*, 2001673; *ACS Energy Lett.* **2020**, *5*, 2256).

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Category
Polymer-Supported Synthesis

Key words
covalent organic frameworks
photocatalysis
[3+2] cycloaddition
2,3-dihydrobenzofurans

Synfact of the Month