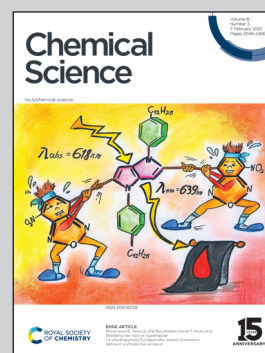


Showcasing collaborative research from Professor Che's laboratory, Department of Chemistry, State Key Laboratory of Synthetic Chemistry, The University of Hong Kong, Hong Kong, P.R. China, and Professor Huang's team at Chemistry and Chemical Engineering Guangdong Laboratory, Shantou, P. R. China.

Luminescent cyclometalated gold(III) complexes covalently linked to metal-organic frameworks for heterogeneous photocatalysis

Visible-light-absorbing gold(III)-functionalized MOFs, **UiO-68[Au1]** and **UiO-68[Au2]**, were developed. **UiO-68[Au1]_{4.5%}** exhibits a longer phosphorescence lifetime than its homogeneous counterpart, reaching approximately 110 μ s under argon when suspended in acetonitrile. The extended excited state lifetime provides tremendous benefits for light-driven organic transformations that rely on energy transfer or electron transfer mechanisms mediated by photo-excited catalysts. **UiO-68[Au1]_{4.5%}** demonstrates good performance in [2+2] cycloaddition reactions, $^1\text{O}_2$ -sensitized oxidation reactions, and reductive cyclization of alkyl bromides. The MOF exhibits remarkable recyclability, as it can be reused for ten consecutive reaction cycles without significant reduction in catalytic efficiency.

As featured in:



See Xiao-Chun Huang, Chi-Ming Che *et al.*, *Chem. Sci.*, 2025, **16**, 2202.