Self-assembly, host-guest chemistry and visible-light induced DMSO degradation of Pd$_6$(FeL$_3$)$_8$ metal-organic cages (MOC)

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Recently, our group has reported an octahedral Pd(II)-Ru(II) heteronuclear Metal-Organic Cage (MOC) compound whose host-guest chemistry and chirality has been thoroughly studied. In this work, we introduced Fe(II) to the construction instead of Ru(II) and thus obtained a MOC with same structure proved by X-ray single crystal diffraction through stepwise self-assembly of diimine ligand, naked Fe(II) and Pd(II) in mild conditions. The assembly process, affinity with phenylacetylene derivatives, electrochemistry as well as photochemistry properties were carefully investigated by NMR technique, CV test, UV-Vis and FL spectra, respectively. It was observed that, the Pd(II)-Fe(II) MOC showed good performance for degradation of DMSO to CH4 using TEOA as sacrificial agent under visible-light irradiation, with TON up to 285 in 6 h.

Biography
Ya-Jun Hou has received her BS in Applied Chemistry from Sun Yat-sen University, China in the year 2014, and is currently pursuing her PhD in Physical Chemistry from Sun Yat-Sen University. Her research interests are supramolecular coordination assembly and its application.

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