

## **An Ultra-stable Eu<sup>3+</sup> Doped Yttrium Coordination Polymer with Dual-function Sensing for Cr(VI) and Fe(III) Ions in Aqueous Solution**

Fazheng Huang<sup>1†</sup>, Xinhao Li<sup>1†</sup>, Zhen Zhang<sup>1†</sup>, Ziqi Jiang<sup>1</sup>, Guoqiang Wang<sup>1</sup>, Lingyun Li<sup>1\*</sup> and Yan Yu<sup>1\*</sup>

<sup>1</sup>Key Laboratory of Advanced Materials Technology, College of Materials Science and Engineering, Fuzhou University, Fuzhou 350108, China

Corresponding authors. Emails: [lilingyun@fzu.edu.cn](mailto:lilingyun@fzu.edu.cn) and [yuyan@fzu.edu.cn](mailto:yuyan@fzu.edu.cn)

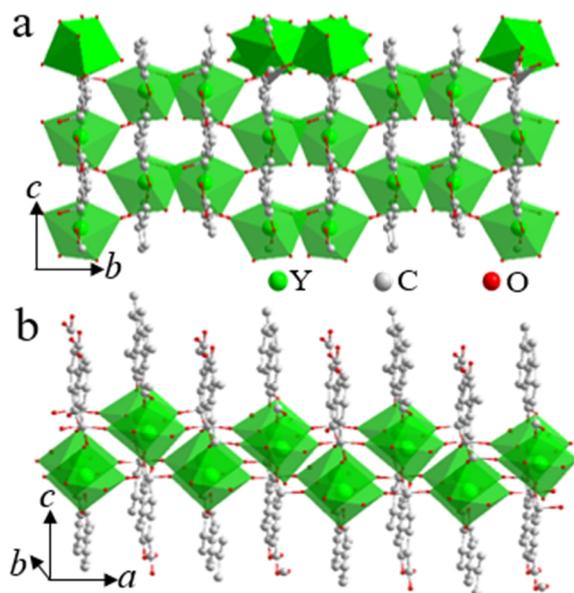


Figure S1.  $\{YO_8\}$  layer in the crystal structure of MIL-92(Y)

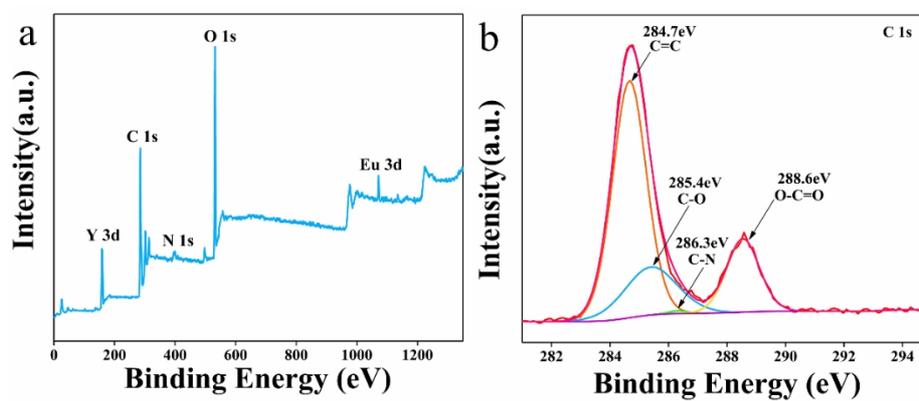


Figure S2. The overall (a) and C 1s high resolution XPS spectra (b) of MIL-92(Y):9%Eu<sup>3+</sup> sample.

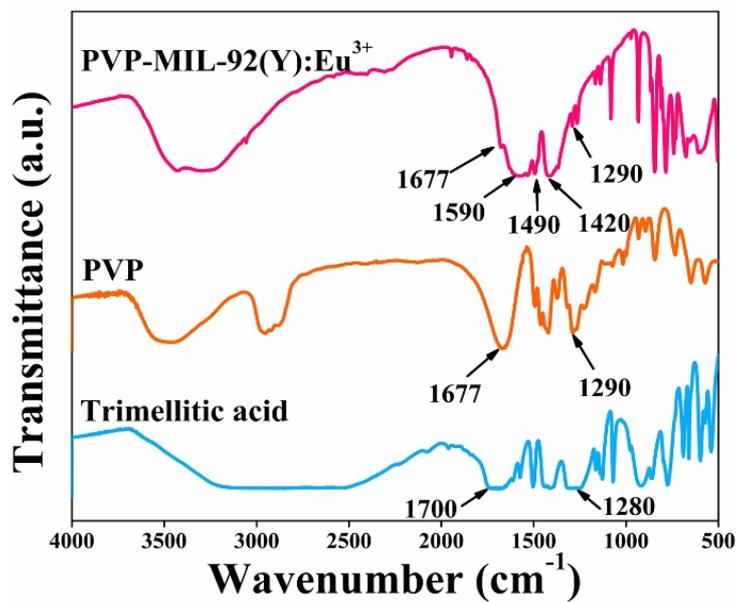


Figure S3. FT-IR spectra of PVP and MIL-92(Y):9%Eu<sup>3+</sup> with and without PVP.

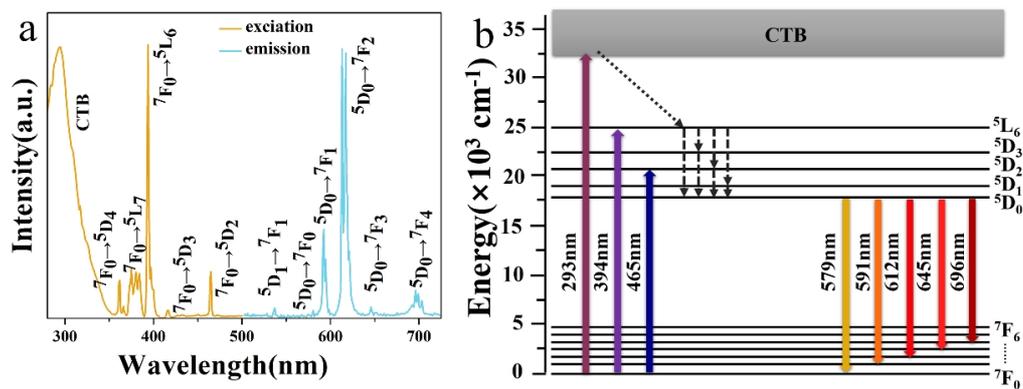


Figure S4. Typical photo-luminescence spectra of  $\text{Eu}^{3+}$  doped MIL-92(Y) (a) and characteristic electron transitions of  $\text{Eu}^{3+}$  (b).

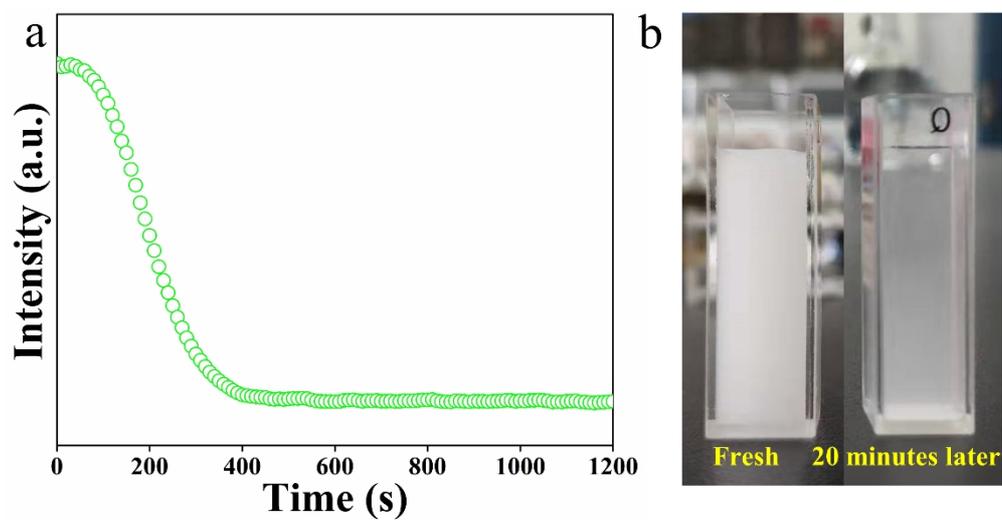
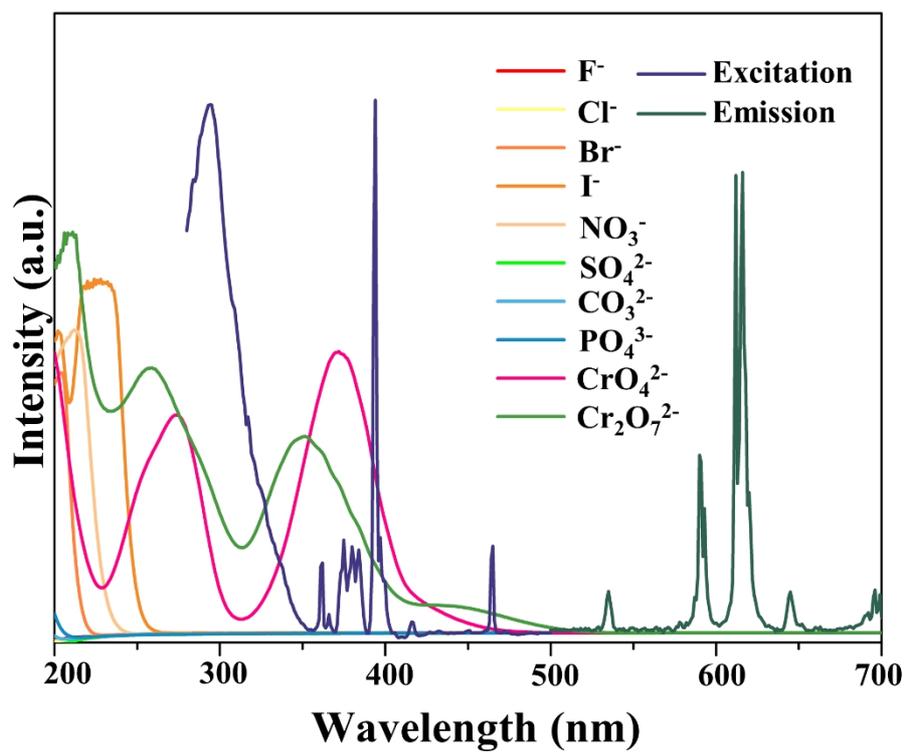


Figure S5. Luminescence intensity (a) and photos (b) of aqueous suspension containing MIL-92(Y):9%Eu<sup>3+</sup> particles without PVP.



**Figure S6.** UV-vis absorption spectra of the aqueous solutions containing different anions with reference to the excitation and emission spectra of MIL-92(Y):9%Eu<sup>3+</sup>.