3D water-stable magnesium metal-organic framework for sensing Fe\(^{3+}\) ion

Rong-Xin Yuan, Ye Liu and Yun-Sheng Ma
Changshu Institute of Technology, China

Excessive Fe\(^{3+}\) ions in water will cause great harm to the human body, even if it is required. Therefore, the design of new fluorescence probes for Fe\(^{3+}\) ion is very important. Herein, Mg(HPCD) (H\(_2\)O) (H3PCD=9-(2-(ethoxy(hydroxy)phosphoryl)ethyl)-9H carbazole-3,6-dicarboxylic acid) was synthesized and characterized. Adjacent {MgO\(_6\)} octahedral are joined by O-P-O and O-C-O groups into 1D chain, which are linked by the HPCD2- ligands to form a 2D layer parallel then packed to form a 3D network (Fig.1). The Fe\(^{3+}\) ion can reduce fluorescence relative to other metal ions (Cd\(^{2+}\), Co\(^{2+}\), Cu\(^{2+}\), Sr\(^{2+}\), Al\(^{3+}\), Zn\(^{2+}\), Mn\(^{2+}\), Pb\(^{2+}\) and Fe\(^{2+}\)) (Fig.2), so the compound may be used as a fluorescence probe for Fe\(^{3+}\) ion.

Biography

Rong-Xin Yuan has completed his PhD in 2002 at Nanjing University. During 2002-2004, he worked at University of Bielefeld and University of Nottingham as a Post-doctoral Fellow. Now, he is the Director of Key Lab of Advanced Functional Materials. He has published more than 80 papers in reputed journals.

yuanrxcs@126.com

Notes: