

## A New Stimuli-Responsive Heteroatom-Functionalized Pb(II) Coordination Polymer: Acidochromic and Thermochromic Luminescence

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Phosphorescent coordination polymers have the potential to be applied as responsive materials due to their high-contrast signal changes in response to external stimuli. Herein, we successfully prepared a new phosphorescent Pb(II) coordination polymer (**1**) based on heteroatomic ligand. Single-crystal X-ray diffraction analysis reveals that **1** possesses a two-dimensional (2D) coordination layer, which is further connected to construct a 3D supramolecular framework through hydrogen bonds facilitated by a coordinated H<sub>2</sub>O molecule and uncoordinated heteroatoms of the ligand. A room-temperature phosphorescence of the solid-state was observed as a result of heavy effect of Pb(II) ions. Interestingly, the phosphorescence significantly changes in selective response to acidic vapors, and heat, demonstrating acidochromic and thermochromic luminescence, respectively. The dual stimuli-responsive property of the Pb(II) coordination polymer in this work is a rare observation among the reported Pb(II)-based coordination compounds. The mechanism for the responsive phenomena of **1** has been well clarified by Fourier transform infrared spectroscopy, powder X-ray diffraction, time-resolved photoluminescence, as well as thermogravimetric and elemental analyses.