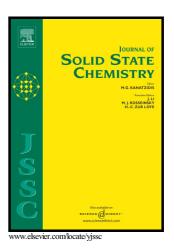
### Author's Accepted Manuscript

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#### **ACCEPTED MANUSCRIPT**

# Mixed sulfoisophthaliate and 1,2,4-triazole directed d<sup>10</sup> metal coordination polymers: synthesis, property and structural diversity

Bing Liu<sup>a,\*</sup>, Kai Guo<sup>a</sup>, Hui-Jun Feng<sup>b</sup>, Wei-Ni Miao<sup>a</sup>, Ting-Ting He<sup>a</sup>, Ling Xu<sup>b,\*</sup>

<sup>a</sup> College of Chemistry and Chemical Engineering, Shaanxi University of Sciences and Technology, Xi'an, 710021, Shaanxi Province, P. R. China.

<sup>b</sup> Key Laboratory of Macromolecular Science of Shaanxi Province, School of Chemistry & Chemical Engineering, Shaanxi Normal University, Xi'an, 710062, Shaanxi Province, P. R. China.

#### bliu\_1203@163.com

xuling@snnu.edu.cn

\*Corresponding authors

#### **Abstract**

This work presents six d<sup>10</sup>-metal coordination polymers based on mixed ligands of 1,2,4-triazoles 5-sulfoisophthalate (1H-1,2,4-triazole  $(H_2SIP^-)$ and (Htr), 3-amino-1H-1,2,4-triazole (Hatr)),  $[Zn_7(SIP)_2(tr)_8(H_2O)_4]\cdot 4H_2O$ 3D (1), $[Zn_4(SIP)(atr)_5(H_2O)_2] \cdot 3H_2O$  (2), 2D  $[Zn_2(SIP)(atr)(H_2O)_3] \cdot 2H_2O$  (3), 2D  $[Ag(H_2SIP)(Hatr)]$ (4 and 5), and 3D [Cd<sub>3</sub>(SIP)(tr)<sub>2</sub>(OH)]·H<sub>2</sub>O (6) under hydrothermal conditions. The structural analysis indicates a ligand directed structural diversity in the metal-(H)SIP-triazole system. The characterizations of 1-6 indicate that the bulk samples are pure phases, the thermal decomposition temperatures are beyond 300 °C, and the fluorescence are blue. The maximum emissions of 1-3 and 6 at around 410 nm are related with the intraligand  $\pi \rightarrow \pi^*$  transitions of 1,2,4-triazole moieties, and those at ca. 350 nm in 4 and 5 are assigned to intraligand transitions of (H)SIP ligands. The temperature-dependent fluorescence of 1-6 show thermal

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