

*Unique Porous Frameworks as Luminescent Probes*

Bin Zhao<sup>1</sup>

<sup>1</sup>Department Of Chemistry, Tianjin, China  
E-mail: zhaobin@nankai.edu.cn

Porous metal-organic frameworks, as luminescent probes for harmful substances, are gradually becoming a hot topic because of their high selectivity, high sensitivity, and renewability. Especially, most in these studies focused on Ln-MOFs as luminescent probes due to their high color purity, long luminescence lifetimes and large Stokes' shifts, which originates from the f-f transitions through an 'antenna effect'. In past 15 years, we made progress in MOFs-based luminescent probes, 1-10 and obtained various lanthanide-based porous frameworks including d-f hetero-metallic ones. The structure and luminescent sensors of these MOFs were systematically investigated for detecting cations, anions and small molecules, as well possible detecting mechanism. Interestingly, we also synthesized stable M(I)-based MOFs with multicenter metal-metal bonds and cubic aromaticity, of which Zn(I)-based MOFs can be used as the luminescent probe of CrO<sub>4</sub><sup>2-</sup> anions. These results were wished to contribute to the development of MOFs-based luminescent probes.

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