

## **Fabrication of luminescent metal-organic framework for optical detection of heavy metals**

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Due to increased usage of heavy metals-based compounds in the current era, the presence of heavy metal ions in the environment has become a major concern, having an adverse impact to human health. Therefore, sensitive and specific monitoring of these metal ion in environmental samples is highly desirable. The existing approaches require high-cost instrumentation, driving the urgent quest for an alternative technique addressing these global concerns. Luminescent metal-organic frameworks (LMOFs)-based sensors have been recognized as promising fluorescent sensors due to presence of unique properties like response time, selectivity, sensitivity, and economic synthesis. In this work, a novel 2D bimetallic metal-organic framework (MOF) was designed using hydrothermal method. The synthesized MOF was characterized by different techniques like FTIR, XRD, SEM, and TGA. As synthesized bimetallic MOF was further explored for fluorescent detection of heavy metal ions. The sensitive detection using proposed material proving it a leading candidate for the detection of heavy metals contamination in environment. Current research may inspire synthesis of other fluorescent frameworks targeting different environmental contaminant.

**Key Words:** Metal organic framework, Luminescence, Heavy metal