Poster Presentation

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Azinphos-methyl Detection in Aqueous Medium using Cadmium based 3D MOF

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A new luminescent metal-organic framework (MOF) [Cd2.5(PDA)(tz)3] {PDA= 1,4-Phenylenediacetate and tz= 1,2,4-triazolate}, 1, has been synthesized by solvothermal reaction. The structure and morphology of 1 was systematically characterized by PXRD, SCXRD, TGA, IR and FESEM. Single crystal X-ray data of 1 confirmed cage connected three-dimensional structure with three different types of Cd2+ ions (square pyramidal, trigonal antiprism and octahedral geometries). The emissive property of compound 1 was used for the highly selective and sensitive detection of azinphos-methyl in aqueous medium through luminescence quenching. Compound 1 is able to detect azinphos-methyl with a detection limit of 16 ppb and its sensitivity remains unchanged in the presence of other pesticides.

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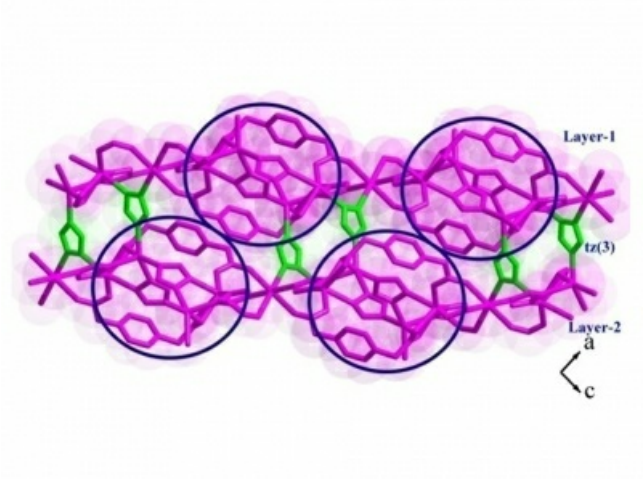

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