

Poster Presentation

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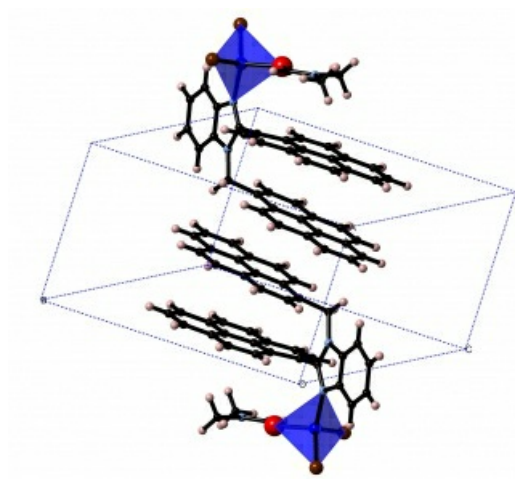
Aggregation induced sensing of ATP using pyrene based zinc complex

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The quantitative measurement of biological important ATP and enzymatic process involved in its' hydrolyses are important to monitor various metabolic dysfunctions in the body. In this purpose, developments of new highly sensitive sensors are demanding that can work in biological system. Here in we have developed fluorescent labelled novel zinc complex of 1,2-disubstituted benzimidazole, Various non-covalent interactions involved in supramolecular assembly formed by the complexes has been investigated from Single crystal X-ray structures. The most impressive feature of this manuscript is, the difference in non-covalent interaction resulting from change in aromatic unit attached with benzimidazole moiety, which play decisive role in supramolecular packing as well as Photophysical properties. Due to sensitivity of these noncovalent interactions toward microenvironment, selective sensing of a particular analyte can be achieved. Keeping these things in mind we have developed pyrene complex as ratiometric sensor for ATP, which interact with ATP through ionic interaction and stacking which cause aggregation. Interesting thing is that this aggregation is also solvent specific. Activity of apyrase enzyme has been examined by monitoring change in emission behavior in aggregation process.

1. Singh, A. Raj, P. Singh, N. (2016) ACS Appl. Mater. Interfaces 8, 28641–28651.
2. Raj, P. Singh, A. kaur, K. Aree, T. Singh, A. Singh, N. (2016) Inorg. Chem. 55, 4874–4883.
3. Singh, A. Singh, A. Singh, N. (2014) Dalt. trans. 43, 16283.



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