

Supramolecular self-assembly of a symmetric imine ligand functionalized with a dansyl fluorophore moiety

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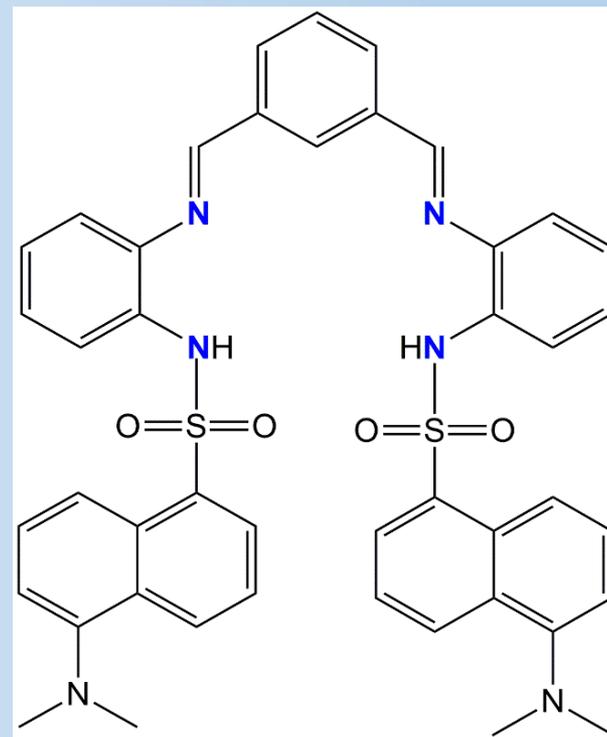
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Introduction

- The coordination chemistry of fluorescent polydentate ligands has received an increased attention in the last decades because of their potential applications in medical, environmental, biological and materials fields.
- Our research group has employed imine-type ligands as suitable kernels to assemble metallosupramolecular complexes.

Aims

Study of the structural features of a novel symmetric ligand (H_2L) and its capability to form metallosupramolecular species.



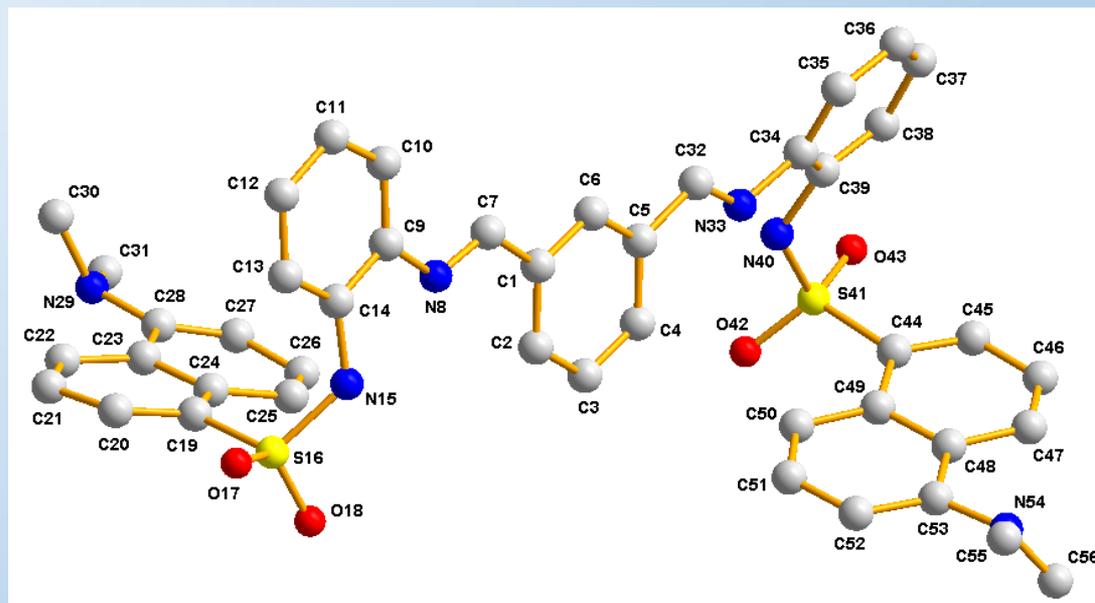
Imine-type tetradentate ligand H_2L

Experimental

Design and synthesis of a symmetric dansyl-functionalized ligand

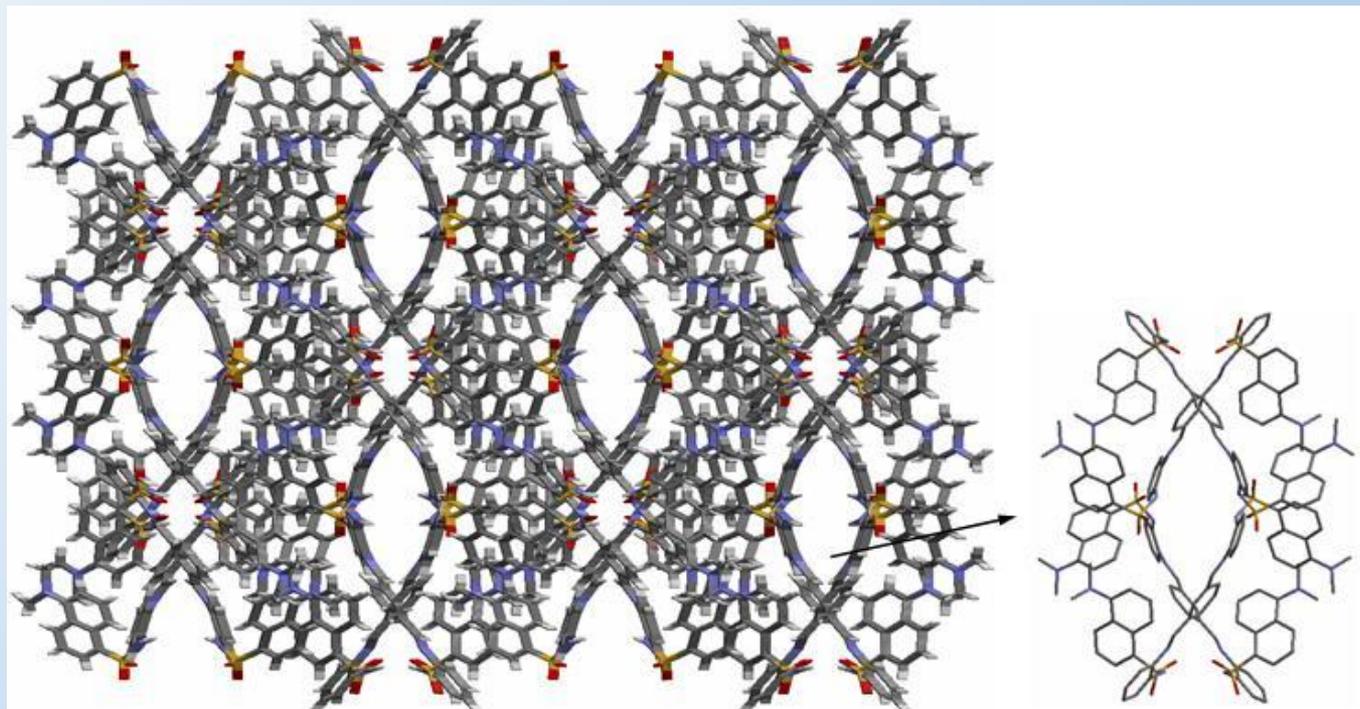
Characterization: E.A., FAB, IR, ^1H NMR, fluorescence emission, X-ray diffraction

Results



- The ligand exhibits an *E* conformation around the imine bonds and the dansyl groups are arranged in an *anti* conformation in order to minimize steric repulsions.
- Intermolecular hydrogen bond interactions are established between sulfonamide groups.

Results



Oval-shaped channels with cavity dimensions of ca. $15 \times 6 \text{ \AA}^2$ are observed in the 3D crystal packing of H₂L

Conclusions

- The spatial conformation adopted by H₂L suggests this ligand is suitable for the assembly of metallosupramolecular complexes with stoichiometry [M₂L₂].
- Interesting supramolecular assemblies might be obtained through the interaction of H₂L with different metal ions.