Azo-based iminopyridine ligands: synthesis, optical properties, theoretical calculations and complexation studies

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Résumé en anglais	We describe herein the full characterization of azobenzene based iminopyridine ligands (L1–L4) synthesized by a condensation reaction between N,N-Dimethyl-4,4′-azodianiline or 4-(4-nitrophenylazo)aniline and 2-pyridinecarboxaldehyde or 2,6-pyridinedicarboxaldehyde. The UV–visible absorption bands of these ligands were fully assigned using DFT and TD-DFT computations. The complexation of ligand L1 and ligand L2 with AgNO3 afforded two neutral silver metal complexes formulated as [AgL1NO3] and [AgL2NO3], respectively. The crystal structure analysis of the two complexes indicate the presence of a Y-shaped tricoordinated silver (I) ion for [AgL1NO3] and a tetracoordinated silver(I) ion displaying rather rare and distorted square planar geometry for [AgL2NO3]. In solid state, for both complexes, a 3D supramolecular architecture is generated via hydrogen bonds of type C–Hċ O and C–Hċπ. The UV–visible spectrophotometric titration studies of ligands L1–L4, by increasing amount of AgNO3 or of ZnCl2 indicates the possibility of forming transition metal complexes with these ligands.
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Liens
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