Synthesis and catalytic application of nickel(II) complexes bearing n-X-(8-quinolyl)-salicylaldimine (X=Cl, Br) ligands: Suzuki-Miyaura cross-coupling reaction

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Abstract: The reaction between Ni(CH₃COO)₂•4H₂O and two equivalents of Hqsal-5-X and Hqsal-3,5-X (Hqsal-X = X-N-(8-quinolyl)salicylaldimine), which X is an electron withdrawing group, generates the complexes, [Ni(qsal-5-X)]₂ (X = Cl 1, Br 2) and [Ni(qsal-3,5-X)]₂ (X = Cl 3, Br 4). The characterization of the complexes has been established by spectral methods and X-ray crystallography. In addition, these complexes have been studied as homogeneous catalysts for Suzuki-Miyaura cross-coupling reaction. It was found that these complexes can effectively catalyse the reaction. All reaction products were monitored by GC-FID and further confirmed by ¹H NMR.

Keywords: Nickel(II) complexes; Spectrophotometry; Stability constants; Suzuki-Miyaura cross-coupling