**ABSTRACT**

Four mononuclear cobalt (II) complexes of substituted hydrazino quinoline Schiff bases 1(a–d) were syn- 25 thesised and characterized by UV, IR, NMR and TGA studies. The geometry of cobalt complexes 1(a–d) 26 unambiguously attested as distorted octahedral’ and the ligand was coordinated through NNO donor 27 fashion of tridentate nature. Structure of the proposed complexes were optimized using Density 28 Functional theory (DFT) with Gaussian 09/ Gauss view software. Mulliken charges, global softness and 29 electrophilicity index were derived for the optimized structure and the energy of highest occupied orbital 30 (HOMO) and lowest unoccupied orbital (LUMO) and energy gap were calculated. The photophysical prop- 31 erties of the synthesised complexes were analyzed by UV–Visible and photoluminescence spectral stud- 32 ies, the results revealed that the emission bands centered in the range of 445–455 nm with higher 33 luminescence intensity and relatively large Stoke’s shift observed (198 nm–215 nm) in the absorption 34 and emission shoed a promising novel material towards OLED’S.