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SYNTHESIS, SPECTRAL, DYEING PERFORMANCE AND BIOLOGICAL ACTIVITY STUDIES OF AZO DYES COMPLEXES WITH SOME METAL IONS

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ABSTRACT

Some azo compounds were prepared by coupling the diazonium salts of amines with 2,4-dimethylphenol The structure of azo compounds were determined on the basis of elemental analyses, ^{1}HNMR, FT-IR and UV-Vis spectroscopic techniques. Complexes of nickel(II) and copper(II) have been synthesized and characterized. The composition of complexes has been established by using flame atomic absorption, (C.H.N) Analysis, FT-IR and UV-Vis spectroscopic methods as well as conductivity magnetic susceptibility measurements. The nature of the complexes formed were studied following the mole ratio and continuous variation methods, Beer's law obeyed over a concentration range (1×10^{-4} - 3×10^{-4} M). High molar absorbtivity of the complex solutions were observed. Analytical data revealed that all the complexes exhibited 1:2 metal-ligand ratios. On the basis of physicochemical data tetrahedral geometries were assigned for the complexes. Biological activity of the ligand and complexes were screened. In addition, the dyeing performance of the prepared ligands and their complexes were applied on cotton fabric. The dyes were tested for light and detergent fastness

KEYWORDS: Metal Complexes, Synthesis Dyes, Biological Activity