SPECTROSCOPIC AND ELECTROCHEMICAL STUDIES ON 1-SUBSTITUTED (OH, CH₃) PHENYL-3, 5-DIPHENYLFORMAZANS AND THEIR NICKEL(II) COMPLEXES

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In this study, the 1-substituted(OH, CH₃)phenyl-3, 5-diphenylformazans and its nickel(II) complexes were prepared and their structures were elucidated by elemental analysis, FT-IR, UV-vis, GC-mass, ¹H NMR, ¹³C NMR. In complexes, the spectral data confirmed that the metal ion replaces the protons of N-H and O-H group of formazans (Scheme 1). Electrochemical properties were investigated in dimethyl sulfoxide (DMSO) with 10-10,000 mV s⁻¹ scan rates. The peak potentials of compounds showed that nickel(II) complexes appear generally at more negative potentials compared to those of corresponding formazans. Electrochemical reaction mechanisms were dependent on the type and position of the substituent in the structure. A correlation between their absorption and electrochemical properties was investigated.

Scheme 1. Formation of 1-substituted (OH, CH₃) phenyl-3, 5-diphenylformazans nickel(II) complexes.