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**Spectroscopic and electrochemical characterization of some Schiff base metal complexes containing benzoin moiety**

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The ligation behavior of bis-benzoin ethylenediamine (B2ED) and benzoin thiosemicarbazone (BTS) Schiff bases towards Ru<sup>3+</sup>, Rh<sup>3+</sup>, Pd<sup>2+</sup>, Ni<sup>2+</sup> and Cu<sup>2+</sup> were determined. The bond length of M-N and spectrochemical parameters (10Dq, beta, B and LFSE) of the complexes were evaluated. The redox characteristics of selected complexes were explored by cyclic voltammetry (CV) at Pt working electrode in non aqueous solvents. Au mesh (100 w/in.) optically transparent thin layer electrode (OTTLE) was also used for recording thin layer CV for selected Ru complex. Oxidation of some complexes occurs in a consecutive chemical reaction of an EC type mechanism. The characteristics of electron transfer process of the couples M<sup>2+</sup>/M<sup>3+</sup> and M<sup>3+</sup>/M<sup>4+</sup> (M = Ru<sup>3+</sup>, Rh<sup>3+</sup>) and the stability of the complexes towards oxidation and/or reduction were assigned. The nature of the electroactive species and reduction mechanism of selected electrode couples were assigned. (C) 2013 The Authors. Published by Elsevier B.V. All rights reserved.

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