



**Synthesis and Characterisation of the Mixed Ligand Complexes,  
[M(ox)(caf)<sub>2</sub>], H<sub>2</sub>O, M=Cu<sup>2+</sup>, Zn<sup>2+</sup>, Mn<sup>2+</sup>, Fe<sup>2+</sup>, Cd<sup>2+</sup>, Co<sup>2+</sup>, Ni<sup>2+</sup>;  
ox=oxalato; caf=caffeine**

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**ABSTRACT**

*In this work, new mixed ligand complexes [M(ox)(caf)<sub>2</sub>], H<sub>2</sub>O, M= Cu<sup>2+</sup>, Zn<sup>2+</sup>, Mn<sup>2+</sup>, Fe<sup>2+</sup>, Cd<sup>2+</sup>, Co<sup>2+</sup>, Ni<sup>2+</sup>; ox=oxalato; caf=caffeine have been prepared. They have been characterized by molar conductance, IR, UV-Visible, EPR spectroscopy. From analytical and spectral data, the stoichiometry of the complexes has been found to be 1: 1: 2 (metal: ox: caf). The infrared and UV-Visible spectra suggest that the oxalato ligand is bidentate chelate and the caffeine behave as a monodentate ligand with N9 donor towards metal ions. The physico-chemical data suggest octahedral divalent metal complexes of dicaffeine oxalato.*

**Keywords:** Oxalato complexes, mixed ligand complexes, caffeine, infrared, UV-Visible, EPR spectroscopy, conductivity.

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