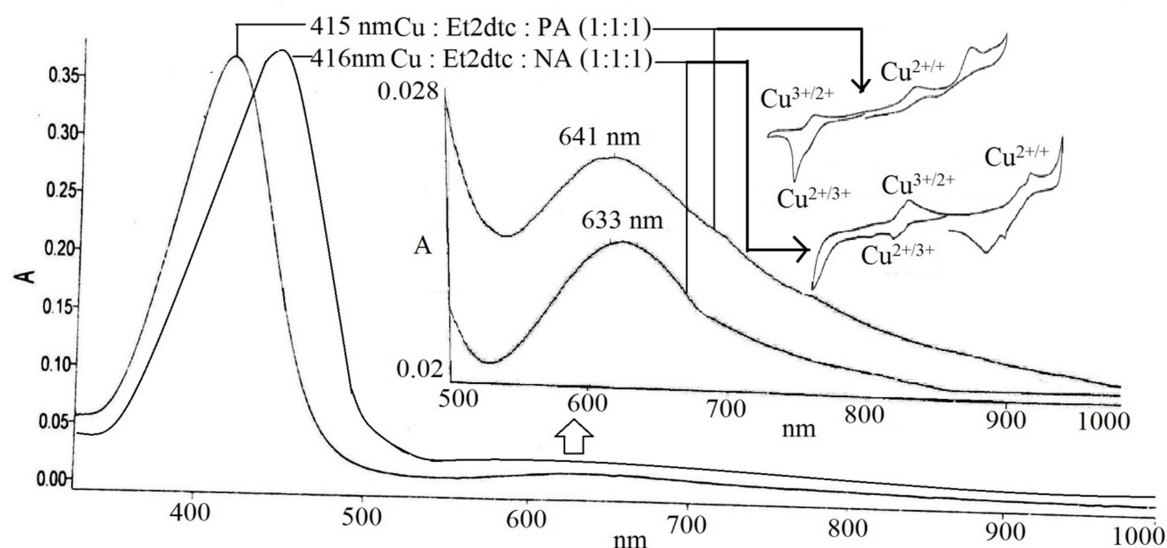


# Cyclic voltammetric behavior of binary and mixed ligand copper complexes with picolinic acid, nicotinic acid and diethyldithiocarbamate in acetone medium

Ved Prakash\*, Krishna Srivastava, Jagdish Prasad

Department of Chemistry, University of Allahabad, Allahabad-211002, UP, India

Email: ved.chem@gmail.com ; phone: +919013649171



## Abstract:

The solution chemistry of picolinic acid (PA), nicotinic acid (NA), diethylthiocarbamate (Et<sub>2</sub>-dtc) ligands and their complexes has been studied by cyclic voltammetry on platinum working electrode and it was observed that the cyclic voltammetric behavior of ligands, binary complexes and mixed ligand complexes are distinctly different. The binary complexes of copper (II) with PA and NA in 1:1 (Cu : PA/NA) molar ratio and their mixed ligand complexes with diethyldithiocarbamate (Et<sub>2</sub>-dtc) in 1:1:1, Cu: Et<sub>2</sub>dtc: PA/NA molar ratio in acetone medium was investigated by cyclic voltammetry and UV-visible spectroscopy. The PA and NA ligand showed irreversible redox couple with  $\Delta E_p$  values  $> 120$  mV. It was observed that mixed ligand complexes exhibits irreversible redox couple in positive potential region due to Cu<sup>2+/3+</sup> and Cu<sup>3+/2+</sup> change. The electronic absorption spectra of binary complexes showed only one peak in

visible region while mixed ligand complexes exhibited two peaks, one in UV region while other visible region.

**Key words:** Copper complexes, Picolinic acid, Nicotinic acid, Diethyldithiocarbamate, Electrochemistry