Five coordinate copper(II) complexes of saccharin with pyridine and dmf

Md Aftab Ali Shaikh

1Institute Of Leather Engineering And Technology, University Of Dhaka, Dhaka, Bangladesh
E-mail: aftabshaikh@du.ac.bd

A. A. Shaikh and G M Golzar Hossain

1Institute of Leather Engineering and Technology, University of Dhaka, Dhaka 1209, Bangladesh
2Department of Chemistry, University of Dhaka, Dhaka-1000, Bangladesh

The copper(II) saccharinate complex containing pyridine and dmf have been prepared and characterized by elemental analyses, IR, UV–Visible, magnetic measurements, thermal analysis and single crystal X-ray diffraction methods. The crystal structure of aqua-bis(pyridine)di(saccharinato)copper(II) \([\text{Cu(sac)}_2(\text{py})_2(\text{H}_2\text{O})]\) and diaqua-(dimethylformamide)-di(saccharinato)copper(II) \([\text{Cu(sac)}_2(\text{H}_2\text{O})_2(\text{dmf})]\) (sac = saccharinate anion; py = pyridine and dmf = dimethylformamide) have been determined. The compounds crystallize in the orthorhombic space group Iba2 with \(Z = 4\) and the Cu(II) ion presents a CuN4O square pyramidal coordination sphere. Two one-electron electrochemical redox processes have been followed by both of the complexes.

Keywords: Cu(II) complex, crystal structure, redox process