



## Coordination compound of Cu(II) with *n,n'*-bis(salicylidene) – methylenediamine(salmen)

FLONDOR Mihaela, SIBIESCU Doina, ROSCA I., CAILEAN A., CARJA Gabriela - Universitatea  
Tehnica "Gh. Asachi" Iasi

The bis-Schiff base, N, N' (salicylidene)-methylenediamine, known as Salmen, forms together with Cu (II) at pH=4.5 a dark green precipitate, which is stable at room temperature. The Salmen was utilized as solution, in an ethylic alcohol-water medium (1:1, v:v) while the Cu (II) - as a fresh, aqueous solution of CuCl<sub>2</sub>. The complex is insoluble in the reaction medium and was separated by filtering.

The compound was studied by chemical analysis, IR-absorption spectra, ESR spectroscopy and thermal analysis. Chemical analysis showed that the precipitation formed is a complex and the combination rate of M: L is 1:1. The IR spectra were recorder between 200 cm<sup>-1</sup> and 4000 cm<sup>-1</sup> using a spectrometer FTIR 660 Plus by the method of KBr pelleting. The ESR spectra were recorder on solid samples with RES-IFA Bucharest spectrometer. Intensity of magnetic field was 3216.9 Gauss at 9030 MHz frequency. ESR spectra evidenced one odd electron in inner coordination sphere compound being paramagnetic. Thermal stability of the complex was studied with MOM Budapest Q-1500D derivatograph to 1000°C. Until 700°C, complex is stable but between 700°C-2800°C there are two loss masses. One corresponding waters molecules loss and the last corresponding thermal degradation complex until copper oxide. Up to 280°C, the decomposition product is stable from thermal point of view. Based on experimental data and literature indications the structural formula of this compound is assigned. Hybridization of copper ion is dsp<sup>2</sup> type and the space configuration is square plane, with two coordination liaisons from both nitrogen atoms and two covalent liaisons between copper ion and oxygen atoms.