Keywords: X-ray; benzimidazole; 2-benzoylbenzoate copper complex

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Synthesis, Spectrothermal and Structural Characterization of Saccharinatobis(tris-hydroxymethylaminomethane)zinc(II) saccharinate Complex, [Zn(sac)(tham)$_2$](sac).

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A novel Zn^{II} complex of the saccharinate ligand (sac) with tris-hydroxymethylaminomethane (tham) was synthesized and characterized by elemental analysis, FT-IR spectroscopy, simultaneous TG and DTA techniques, and X-ray diffraction. The complex, [Zn(sac)(tham)$_2$](sac), crystallizes in monoclinic system with space group P21/c [a= 7.55954(3) Å, b =13.0532(6) Å, c =27.7777(10) Å, β =100.539(3)°, Z= 4]. The Zn^{II} ion has a distorted octahedral coordination. The tham ligand has chemically different functions in the structure, acting as both bidentate and tridentate ligands. There are also sac moieties to act as N-bonded ligand and as a counter anion. The molecular packing of the complex is provided by moderate hydrogen bonds as well as $\pi\cdots\pi$ interactions between the sac moieties. The IR spectra and the thermal decomposition of the complex are also discussed.

Keywords: zinc; saccharinato complex; tris-hydroxymethylaminomethane; crystal structure; thermal decomposition