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Some new zinc pseudohalide bis-imine complexes: Synthesis, characterization, thermokinetic decomposition study and antimicrobial properties

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Nowadays synthesis of new ligands suitable and then preparation of their complexes are in the frontier in pure and applied inorganic chemistry. Accordingly, the iminic ligands are important, which can be coordinated to metal ions via thier iminic nitrogen atoms to form the related imine complexes. These complexes are applicable in catalytic, industrial and medicinal(as antibacterial, anti fungal and antioxidant agents) fields in recent years[1-4]. Imine complexes have also cytotoxicity effects aginst varios cancerious cell lines. Recently also these complexes are applied as precursor to prepare nano-structured metal oxides. Among various metal oxides that were studied, zinc oxide nanoparticles are of great interest due to various applications in optic and biological properties.

In this work, a new bidentate bis-imine ligand obtained from 2-methoxyphenyl-2-propenal and phenylenediamine and its four coordinated Zn(II) pseudohalide complexes(inwhich pseudohalide is SCN^-, N_3^- and NO_3^-) have been synthesized and investigated by analytical and spectral data(FT/IR, UV-Visible and ^1H and ^{13}C NMR) and thermal analyses. Moreover antibacterial and antifungal properties of the ligand and its complexes were evaluated by well diffusion method. Finally the zinc complexes were used as precursor for preparation of nanostructured ZnO..

Keywords: Zinc complex, Bis-imine, Antibacterial, Nanostructure.

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