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# Synthesis and spectral characterization of metal complexes of Schiff base derived from indole-3-carboxaldehyde and L-histidine as potent biocides

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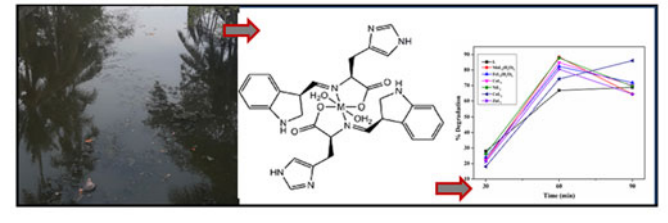
**ABSTRACT**

This research work presents the structural features and biological activities of a novel series of Mn/Fe/Co/Ni/Cu/Zn(II)-(indal-L-his) complexes obtained from indole-3-carboxaldehyde (indal) and L-histidine (L-his). The prepared compounds were characterized by elemental analysis, molar conductivity, magnetic, IR, UV–vis, $^{1}$H NMR, mass and ESR spectroscopies, powder XRD and TGA studies. Electronic spectra and magnetic moment data suggest an octahedral geometry for [Mn(II)-(indal-L-his)$_2$($H_2O$)$_2$] and [Fe(II)-(indal-L-his)$_2$($H_2O$)$_2$], tetrahedral geometry for [Co(II)-(indal-L-his)$_2$] and [Zn(II)-(indal-L-his)$_2$] and square planar geometry were assigned for [Ni(II)-(indal-L-his)$_2$] and [Cu(II)-(indal-L-his)$_2$]. The photocatalytic efficiency was explored for the synthesized compounds. *In vitro* antimicrobial activity of synthesized compounds was analyzed against some selected Gram-positive and Gram-negative bacterial and fungal species by disc diffusion technique. The compounds have shown to reveal excellent antibacterial and antifungal activity.



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Indole-3-carboxaldehyde; L-histidine; NMR; Mass; TGA; Photocatalytic efficiency

## 1. Introduction

Schiff bases and their metal complexes are well known in their potent aspects for biomedical applications. Microbial resistance to the existing antimicrobial would be a major threat to humanity. Development in the field of bioinorganic chemistry has

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