

SYNTHESIS, OPTIMIZATION, CHARACTERIZATION AND ANTIMICROBIAL STUDIES OF Cu(II) AND Co(III) COMPLEXES OF BIS(2,2'-METHYLYLIDENEPHENOL)DIAMINOETHANE

Felix Sunday Nworie^{*}, Frank Ikenna Nwabue

Department of Industrial Chemistry, Faculty of Science, Ebonyi State University, Abakaliki, Nigeria
^{*}*e-mail: nworie.felix@gmail.com; phone: (+234) 803 481 33 42*

Abstract. A new synthetic extractive protocol for the synthesis of Cu(II) and Co(III) complexes of bis(2,2'-methylidenephenol)diaminoethane (H₂BMPDE) in a single simple step was performed. The obtained data indicated the formation of complexes with 1:1 molar ratio of metal:ligand, of distorted square planar and distorted octahedral geometries. *In vitro* antibacterial screening revealed that the complexes were active against clinically important gram-negative bacteria (*Escherichia coli*, *pseudomonas*, and gram-positive bacterium (*Staphylococcus aureus*). The synthesis of the complexes was optimized to make it more suitable and efficient for industrial scale production.

Keywords: H₂BMPDE-complex, modelling, physicochemical study, antimicrobial bio-efficiency.

Received: 09 March 2017/ Revised final: 29 September 2017/ Accepted: 06 November 2017