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Synthesis, characterization and liquid crystalline properties of novel benzimidazol-8-hydroxyquinoline complexes

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ABSTRACT

The synthesis, characterization and liquid crystalline properties of N₄,N_{4'}-bis((1H-benzo[d]imidazol-2-yl)methyl)-3,3'-dimethyl-[1,1'-biphenyl]-4,4'-diamine and of their corresponding Mn(II), Fe(II), Ni(II), Cu(II), and Zn(II) complexes are described. The ligand and complexes have been characterized by elemental analysis, magnetic susceptibility measurements (μ_{eff}), conductometric measurements and Fourier Transform Infrared (FTIR), Nuclear Magnetic Resonance (¹H-NMR), (¹³C-NMR) and UV-Vis spectroscopy. Spectral investigations suggested octahedral coordination geometrical arrangement for M(II) complexes. The phase transition temperatures were detected by differential scanning calorimetry (DSC) analysis and the phases are confirmed by optical polarizing microscopy (POM). The DSC and POM supported the mesomorphic properties of the

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