

SYNTHESIS OF ZnFe₂O₄ BY STEARIC ACID GEL METHOD AND ITS CHARACTERIZATION

P. R. ARJUNWADKAR & R. K. MAHADULE

Department of Physics, Government Institute of Science, Nagpur, Maharashtra, India

ABSTRACT

A simple Stearic acid gel method is used to prepare ZnFe₂O₄. The X-ray diffraction data when compared with the PDF file no 82-1042 for the same compound but prepared by standard ceramic method revealed that the method used in present work can be successfully employed to prepare the compound. The lattice parameter observed is 8.445 Å which matched with the reported 8.440 Å. The variation of dc electrical conductivity with temperature indicated semiconducting nature of the compound. The theoretically expected Curie molar constant of the compound calculated using spin only values of the cations is found to match with the experimental value and hence gave additional confirmation of the formation of desired compound.

KEYWORDS: Stearic Acid Gel, Zinc Ferrite, Conductivity, Curie Molar Constant