

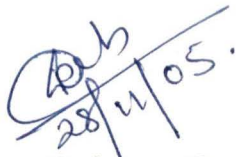
TO WHOM IT MAY CONCERN

This is to certify that the dissertation work entitled "Effect of heat treatment temperature on Nickel Ferrite (NiFe_2O_4) nanoclusters", submitted by Mr. Sukanta Das, Roll No.-04500515, 3rd semester, Department of Physics, is a bonafide record of work carried out under my supervision.

During the period of project work he has been sincere and hard working. I wish all the best for him.

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Place: Tezpur


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PREFACE

In recent years, nanostructured materials are being area of extensive research work. At nanodimension due to increase in surface to volume ratio these materials shows unique characteristics. It has huge potential application in the field of technology. But the problem occur in technology application of nanostructured material is that one can able to apply it only when it is fully characterized and controlled in their structure and if the correlation between their properties and their structure is well understood then nanostructured material with controlled properties can be produced reproducibly.

Since the Nanoparticle, which I will synthesized and characterized, is magnetic, so the report gives information on magnetic Nanoparticle. The present report mainly contains literature review on Magnetism, Superparamagnetism, Nanomagnetism & their application, ferrites, application of ferrites, Nickel ferrites. The next section contains different preparation techniques, the present techniques, merits of the present techniques, Compositional Characterization (FTIR spectroscopy) of the commercially available Nickel ferrite. The last section includes conclusion, the futures plans and bibliography is given in the end.

Sukanta Das
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