DIELECTRIC STUDY OF Fe_3O_4 BASED FERROFLUID IN FOUR DIFFERENT CARRIERS

A Dissertation submitted to Department Of physics,

Vimala College (Autonomous), Calicut University

MASTER OF SCIENCE

IN

PHYSICS

Submitted by

MARIA JOSEPH C

Reg.no: **VMARMPH009**

Under the esteemed supervision and guidance of

M. R. ANANTHARAMAN

Professor

Department of Physics Cochin University of Science and Technology, Kerala

CUSAT

APRIL 2019

CERTIFICATE

Certified that this project entitled *"Dielectric study of Fe_3O_4 based ferrofluid in four different carriers"* is based on the bonafide work done by *Maria Joseph C* in partial fulfilment of the requirements for the award of the degree of Master of Science in Physics under my guidance in the Department of Physics, Cochin University of Science and Technology.

Prof. M. R. Anantharaman

COCHIN
MAY 2019

Supervising Guide
Department of Physics
CUSAT

CERTIFICATE

This is to certify that the project entitled **"DIELECTRIC STUDY OF Fe_3O_4 BASED FERROFLUID IN FOUR DIFFERENT CARRIERS"** being submitted by **MARIA JOSEPH C (VMARMPH009)** in partial fulfilment of requirements for the award of degree of **MASTER OF SCIENCE** in **PHYSICS** of university of Calicut is a bonafide record of the work carried out at the Department of Physics during the period of 2018-2019.

Dr. MALINI K.A

(Head of the Department)

External examiners:

1. ~~Marly~~ 15/5/2019 Dr. Shaju K Y

2. ~~Bheh~~ 15/5/2019 Dr. Sudheendran

Place: Thrissur

Date: 15/5/19

DECLARATION

I hereby declare that M.Sc. project entitled **"DIELECTRIC STUDY OF FE$_3$O$_4$ BASED FERROFLUID IN FOUR DIFFERENT CARRIERS"** is a bonafied work carried out under the guidance and supervision of **Prof. M. R. ANANTHARAMAN**, Professor, Department of Physics, Cochin University of Science and Technology, Cochin, Kerala, India.

Kochi,

03-05-2019

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