

WAVE DECOMPOSITION ANALYSIS OF
GEOMAGNETIC FIELD VARIATIONS ON
A SOLAR ECLIPSE DAY

Project submitted to
AL AMEEN COLLEGE, EDATHALA ,ALUVA



In partial fulfillment of the requirements for the award of the degree of

MASTER OF SCIENCE

IN

PHYSICS

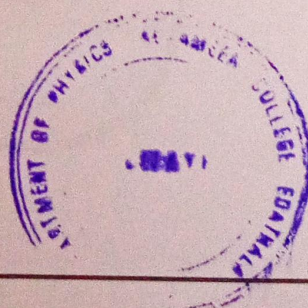
BY

ASIM KHAN &

ANISH VARGHESE

Department of Physics

AL-AMEEN COLLEGE, EDATHALA, ALUVA



**DEPARTMENT OF PHYSICS
CHRISTIAN COLLEGE, CHENGANNUR**



CERTIFICATE

This is to certify that the project work entitled **WAVE DECOMPOSITION ANALYSIS ON GEOMAGNETIC FIELD VARIATIONS ON A SOLAR ECLIPSE DAY** is an authentic record of work carried out by **MR. ANISH VARGHESE**, Department of Physics Al Ameen College, Aluva under my guidance for the partial fulfilment of the award of the Degree of Master of Science in Physics from Mahatma Gandhi University Kottayam, Kerala.

Date: **11.8.2021**

Dr . LIGI CHERIAN Head of the Department
Post Graduate & Research Dept. of Physics
Christian College
Chengannur - 689 122, Kerala - India
E-mail: physics@christiancollege.ac.in

Associate Professor
Head Of Department of Physics
Christian College, Chengannur



A LITERATURE REVIEW ON OPTICAL PROPERTIES OF TIN SULPHIDE THIN FILM

Project report by

RINCY

(Reg no: 190011018870)

In partial fulfilment for the award of degree of

MASTER OF SCIENCE IN PHYSICS

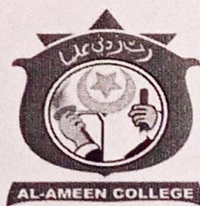
(2019-2021)

Under the guidance of

Mrs SREEJA.C

Assistant professor, Department of Physics,

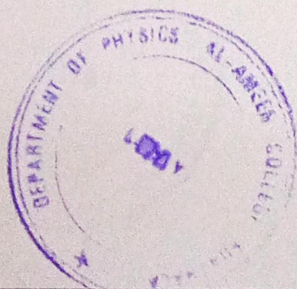
Al-Ameen College, Edathala, Aluva



Department of Physics

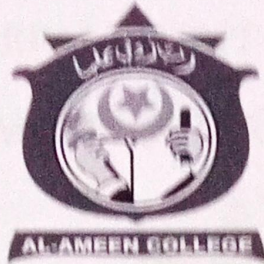
AL-AMEEN COLLEGE, EDATHALA, ALUVA

(M.G University)



DEPARTMENT OF PHYSICS
AL-AMEEN COLLEGE EDATHALA

Affiliated to Mahatma Gandhi University, Kottayam



CERTIFICATE

This is to certify that the project entitled "*A LITERATURE REVIEW ON OPTICAL PROPERTIES OF TIN SULPHIDE THIN FILM*" submitted by Ms.RINCY P to Al-Ameen College, Edathala towards the partial fulfilment of the award of Master of Science degree is a bonafide record of the project work done by her under my supervision and guidance.



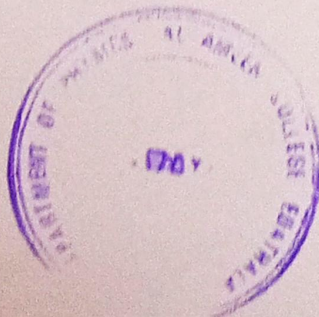
SIGNATURE OF GUIDE

Mrs.Sreeja. C

Assistant Professor

Department of Physics

Al-Ameen College, Edathala



AL - AMEEN COLLEGE, EDATHALA
ALUVA 683 561
Affiliated to Mahatma Gandhi University, Kottayam
(Re-Accredited with A grade)



PROJECT REPORT

M.Sc. PHYSICS
ASWATHY T D
(190011018857)





Dr. Sibi K. S.
Assistant Professor and Head
Department of Physics

University of Kerala
Thiruvananthapuram-695034
sibi@keralauniversity.ac.in

CERTIFICATE

Certified that the work presented in the project work entitled "Emotion Detection from Musically Stimulated EEG" is an authentic record of bonafide research work done by ASWATHY T D, under my guidance and supervision in the Department of Physics, University of Kerala, Thiruvananthapuram 695581 and no part of it has been included in any other thesis submitted previously for the award of any degree. It is also certified that plagiarism checking has been effected using the URKUND software approved by the UGC/University and that no plagiarism has been found in this thesis.

Kariavattom
23/06/2021

Sibi K S (Guide)



CHARACTERISATION OF BARIUM TITANATE NANOPARTICLES

Project report submitted to

Mahatma Gandhi University, Kottayam

In partial fulfilment of the requirements for the award of degree of

MASTER OF SCIENCE IN PHYSICS

Submitted By

CELINE BRIGHTY VARGHESE

Reg. No. 190011018859

Under the guidance of

Dr. MANJUSHA M.V

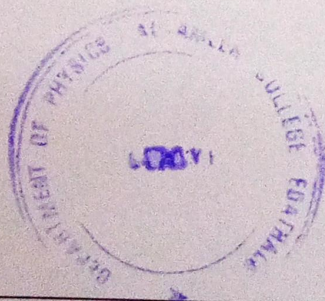
Department of Physics, THE COCHIN COLLEGE



Department of Physics

Al-Ameen College, Edathala, Aluva
(M.G University) Kerala 683561

AUGUST 2021





The Cochin College

Affiliated to Mahatma Gandhi University
Re-accredited by NAAC with B Grade

CERTIFICATE

This is to certify that the project work entitled “**CHARACTERISATION OF BARIUM TITANATE NANOPARTICLES**” is the bonafide work done by **CELINE BRIGHTY VARGHESE** (Reg. No. 190011018859) student of Al-Ameen College, Edathala, under my supervision and guidance in department of physics, THE COCHIN COLLEGE, Kochi during 2019-2021 towards the partial fulfillment of the requirements of Master of Science in Physics by Mahatma Gandhi University, Kottayam.

Place: Kochi
Date: 16/8/21

Manjusha
Signature of the project guide
Dr. MANJUSHA M.V
Assistant Professor
Department of Physics
THE COCHIN COLLEGE, COCHIN

Dr MANJUSHA M V
Assistant Professor
Department Of Physics
The Cochin College
Cochin- 682 002



SYNCHRONIZATION IN COUPLED IZHIKEVICH NEURONS

Submitted to
MAHATMA GANDHI UNIVERSITY
KOTTAYAM

in partial fulfillment of the requirements for the
award of the degree of **MASTER OF SCIENCE** in
PHYSICS by

ATHIRA VIJAYAKUMAR

MELVIN VARGHESE

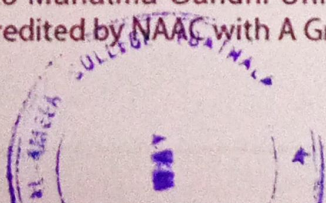
Reg No: 190011018858, 190011018865

DEPARTMENT OF PHYSICS
AL AMEEN COLLEGE, EDATHALA



Al-Ameen COLLEGE

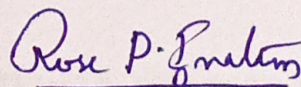
Affiliated to Mahatma Gandhi University, Kottayam
Re-Accredited by NAAC with A Grade (CGPA 3.15)



DEPARTMENT OF PHYSICS
AL AMEEN COLLEGE, EDATHALA

CERTIFICATE

This is to certify that the project entitled "**SYNCHRONIZATION IN COUPLED IZHIKEVICH NEURONS**" is an authentic record of the project work carried out by **Miss ATHIRA VIJAYAKUMAR and Mr MELVIN VARGHESE** of final year M.Sc Physics, Al-Ameen College, Edathala, under the supervision and guidance of **Dr. Rose P Ignatius**, in partial fulfilment of the requirements for the award of the degree of Master of Science in Physics under the faculty of Science of Al-Ameen College, Edathala during the academic year 2019-2021.



DR. ROSE P IGNATIUS
HEAD OF THE DEPARTMENT
DEPARTMENT OF PHYSICS
AL AMEEN COLLEGE, EDATHALA

DYNAMICS OF NEURON MODELS

Submitted to

MAHATMA GANDHI UNIVERSITY

KOTTAYAM

in partial fulfillment of the requirements for the
award of the degree of **MASTER OF SCIENCE** in
PHYSICS by

KAVYA AI

RAMEEZA K A

Reg No: **190011018868 AND 190011018868**

DEPARTMENT OF PHYSICS

AL AMEEN COLLEGE, EDATHALA



Al-Ameen COLLEGE

Affiliated to Mahatma Gandhi University, Kottayam
Re-Accredited by NAAC with A Grade(CGPA 3.15)

DEPARTMENT OF PHYSICS
AL AMEEN COLLEGE, EDATHALA

CERTIFICATE

This is to certify that the project entitled "**DYNAMICS OF NEURON MODELS**" is an authentic record of the project work carried out by **Mrs KAVYA AI and RAMEEZA K A** of final year M.Sc Physics, Al-Ameen College, Edathala, under the supervision and guidance of **Dr.Rose P Ignatius**, in partial fulfilment of the requirements for the award of the degree of Master of Science in Physics under the faculty of Science of Al-Ameen College, Edathala during the academic year 2019-2021.

Rose P. Ignatius

DR.ROSE P IGNATIUS
HEAD OF THE DEPARTMENT
DEPARTMENT OF PHYSICS
AL AMEEN COLLEGE, EDATHALA

*Hydrothermal synthesis of molybdenum disulphide(MoS₂)
nanoparticles and characterization*

Project report submitted to
Mahatma Gandhi University, Kottayam *in partial fulfilment*
of the requirements for the award of degree of
MASTER OF SCIENCE IN PHYSICS

Submitted By
SAHLA BEEVI P.E
(Reg. No. 190011018872)

Under the guidance of
Dr. ASHA A S
Department of Physics, CUSAT



Department of Physics
Al-Ameen College, Edathala, Aluva
(M.G University) Kerala 683561
AUGUST 2021

CERTIFICATE

This is to certify that the project work entitled "*Hydrothermal synthesis of molybdenum disulphide (MoS₂) nanoparticles and characterization*" is the bonafide work done by **Mrs. SAHLA BEEVI P E** (Reg. No. 190011018872), student of Al-Ameen College, Edathala, under my supervision and guidance at the Department of Physics, Cochin University of Science And Technology, Kochi, during 2019-2021 towards the partial fulfillment of the requirements of the degree of Master of Science in Physics by Mahatma Gandhi University ,Kottayam.



Dr. ASHA A. S.
Assistant Professor
Department of Physics
CUSAT
Kochi 682 022

A REVIEW ON GREEN SYNTHESIS OF BISMUTH OXIDE NANOPARTICLES

PROJECT REPORT

By

RESHMA SURESH

Register no: 190011018869

In partial fulfillment for the award of the degree of
MASTER OF SCIENCE IN PHYSICS
(2019-2021)

Under the guidance of

Mrs. RENJINI TN

Assistant professor, Department of Physics
Al-Ameen College, Edathala, Aluva



Department of physics
Al-Ameen College, Edathala, Aluva
(MG University)

**DEPARTMENT OF PHYSICS
AL-AMEEN COLLEGE EDATHALA**

Affiliated to Mahatma Gandhi University, Kottayam



CERTIFICATE

This is to certify that the project work entitled “**A Review on Green Synthesis of Bismuth Oxide Nanoparticles**” submitted to Al-Ameen College, Edathala is a bonafide record of work done by **Ms. Reshma suresh** for the partial fulfillment of the award of Master of Science degree in Physics during the year 2019-21 under my supervision and guidance.

Signature of guide

Mrs. RENJINI TN
Assistant professor
Department of physics
Al-Ameen College, Edathala

CHARACTERISATION OF BISMUTH FERRITE
DOPED WITH COBALT NANOPARTICLE

Project report submitted to

Mahatma Gandhi University, Kottayam *in partial fulfilment*
of the requirements for the award of degree of
MASTER OF SCIENCE IN PHYSICS

Submitted By

SUHANA NARGIS

Reg. No. **190011018873**

Under the guidance of

Dr. MANJUSHA M.V

Department of Physics, THE COCHIN COLLEGE



Department of Physics

Al-Ameen College, Edathala, Aluva
(M.G University) Kerala 683561

AUGUST 2021



The Cochin College
Affiliated to Mahatma Gandhi University
Re - accredited by NAAC with B Grade

CERTIFICATE

This is to certify that this is a bonafide project entitled "CHARACTERISATION OF BISMUTH FERRITE DOPED WITH COBALT NANOPARTICLE" carried out by Mrs. SUHANA NARGIS Reg. No. **190011018873** student of master of science in physics, Al-Ameen College, Edathala, successfully completed, under my supervision and guidance at Department of Physics, The Cochin College, Kochi during 2019-2021 towards the partial fulfillment of the requirements of Master of Science in Physics by Mahatma Gandhi University, Kottayam. And the content of this project has not been included in any other project report submitted previously for the award of any degree.

Place: Kochi
Date: 16/8/21

Manjusha
Dr. MANJUSHA M. MANJUSHA M
Assistant Professor Assistant Professor
Department of Physics Department of Physics
The Cochin College The Cochin College
Cochin - 682 002
The cochin college



THERMODYNAMIC STUDY OF KERR-NEWMAN ANTI-De SITTER BLACK HOLE

Project report submitted to
AL-AMEEN COLLEGE , EDATHALA



In partial fulfillment of the requirements for the award of the degree of

MASTER OF SCIENCE

IN

PHYSICS

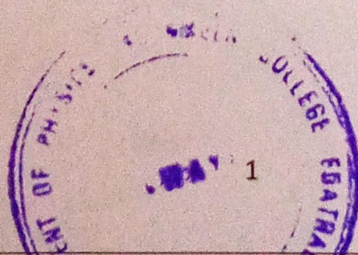
BY

NEHADA & ABHISHEK V

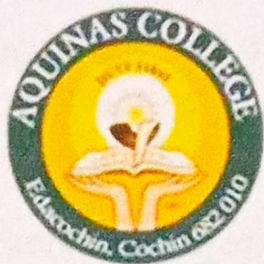
REG NO:190011018866,190011018850

Department of Physics

AL-AMEEN COLLEGE, EDATHALA



**DEPARTMENT OF PHYSICS
AQUINAS COLLEGE, EDACOCHIN**



CERTIFICATE

This is to certify that the project work entitled THERMODYNAMICS STUDY OF KERR-NEWMAN Ads BLACK HOLE is an authentic record of work carried out by Ms.NEHADA & Mr.ABHISHEK V under my guidance for the partial fulfillment of the award of the Degree of Master of Science in Physics in Al Ameen College, Edathala.

Date:

Dr. THARANATH R
ASSISTANT PROFESSOR
DEPARTMENT OF PHYSICS
AQUINAS COLLEGE, EDACOCHIN

A REVIEW ON GREEN SYNTHESIS OF BISMUTH OXIDE NANOPARTICLES

PROJECT REPORT

By

ARYA S

Register no: 190011018855

In partial fulfillment for the award of the degree of
MASTER OF SCIENCE IN PHYSICS
(2019-2021)

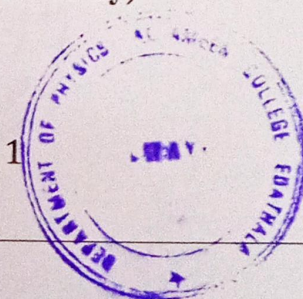
Under the guidance of

Mrs. RENJINI TN

Assistant professor, Department of Physics
Al-Ameen College, Edathala, Aluva



Department of physics
Al-Ameen College, Edathala, Aluva
(MG University)



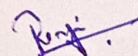
**DEPARTMENT OF PHYSICS
AL-AMEEN COLLEGE EDATHALA**

Affiliated to Mahatma Gandhi University, Kottayam



CERTIFICATE

This is to certify that the project work entitled “**A Review on Green Synthesis of Bismuth Oxide Nanoparticles**” submitted to Al-Ameen College, Edathala is a bonafide record of work done by **Ms.Arya S** for the partial fulfillment of the award of Master of Science degree in Physics during the year 2019-21 under my supervision and guidance.



Signature of guide

Mrs. RENJINI TN
Assistant professor
Department of physics
Al-Ameen College, Edathala



A REVIEW ON STRUCTURAL STUDIES OF GREEN SYNTHESIZED SILVER NANOPARTICLES

PROJECT REPORT

By

FATHIMA M.A

Register no: 190011018862

In partial fulfillment for the award of degree of

MASTER OF SCIENCE IN PHYSICS

(2019-2021)

Under the guidance of

Mrs. RENJINI TN

Assistant professor, Department of Physics

Al -Ameen College, Edathala, Aluva



Department of physics
Al-Ameen College, Edathala, Aluva
(MG University)

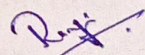
**DEPARTMENT OF PHYSICS
AL-AMEEN COLLEGE EDATHALA**

Affiliated to Mahatma Gandhi University, Kottayam



CERTIFICATE

This is to certify that the project entitled “ **A REVIEW ON STRUCTURAL STUDIES OF GREEN SYNTHESIZED SILVER NANOPARTICLES**” submitted by **FATHIMA M.A** to Al-Ameen College, Edathala towards the partial fulfillment of the award of Master Of Science degree is a bonafide record of the project work done by her under my supervision and guidance.



Signature of guide

Mrs. RENJINI TN
Assistant professor
Department of physics
Al-Ameen College, Edathala

Characterization of Cobalt Ferrite & Metal Substituted Cobalt Ferrite Nanoparticles

Project report submitted to

AL AMEEN COLLEGE, EDATHALA

In partial fulfillment of the requirements for the award of the
degree of

MASTER OF SCIENCE

IN

PHYSICS

By

AMENDA DAS

Reg.No.190011018852

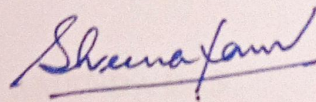


DEPARTMENT OF PHYSICS

AL AMEEN COLLEGE, EDATHALA

CERTIFICATE

This is to certify that the project work entitled "**Characterization of Cobalt Ferrite & Metal Substituted Cobalt Ferrite Nanoparticles**" is a bonafide record done by **AMENDA DAS (Reg.No 190011018852)** in partial fulfillment of the requirement of award of the degree of Master of Science in Physics under my guidance and supervision.



Place: Aluva

Date: 12-8-2021

Dr. Sheena Xavier

Associate Professor

St. Xavier's College for Women

Aluva

A LITERATURE REVIEW ON
STRUCTURAL PROPERTIES OF TIN
SULPHIDE THIN FILM

Project report by

SWATHY HARIDAS

(Reg. no: 190011018874)

In partial fulfilment for the award of degree of

MASTERS OF SCIENCE IN PHYSICS

(2019-2021)

Under the guidance of

Mrs SREEJA C.

Assistant Professor, Department of Physics,

Al-Ameen College, Edathala, Aluva



Department of Physics

AL-AMEEN COLLEGE, EDATHALA, ALUVA

(M.G. UNIVERSITY)

DEPARTMENT OF PHYSICS

AL-AMEEN COLLEGE, EDATHALA

Affiliated to Mahatma Gandhi University, Kottayam



CERTIFICATE

This is to certify the project entitled "*A literature review on structural properties of tin sulphide thin film*" submitted by Ms. Swathy Haridas to Al-Ameen College, Edathala towards the partial fulfilment of the award of Masters of Science degree is a bonafide record of the project work done by her under my supervision and guidance.

A handwritten signature in blue ink, appearing to read 'Sreeja C.', is written over a horizontal line.

SIGNATURE OF GUIDE

Mrs. Sreeja C.

Assistant Professor

Department of Physics

Al-Ameen College, Edathala

Characterization of Cobalt Ferrite & Metal Substituted Cobalt Ferrite Nanoparticles

Project report submitted to

AL AMEEN COLLEGE, EDATHALA

In partial fulfillment of the requirements for the award of the
degree of

MASTER OF SCIENCE

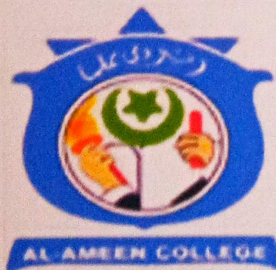
IN

PHYSICS

By

ANUPAMA P.B

Reg.No.190011018854

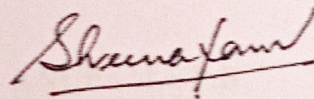


DEPARTMENT OF PHYSICS

AL AMEEN COLLEGE, EDATHALA

CERTIFICATE

This is to certify that the project work entitled "Characterization of Cobalt Ferrite & Metal Substituted Cobalt Ferrite Nanoparticles" is a bonafide record done by ANUPAMA P.B (Reg.No 190011018854) in partial fulfillment of the requirement of award of the degree of Master of Science in Physics under my guidance and supervision.



Place: Aluva

Date: 12-8-2021

Dr. Sheena Xavier

Associate Professor

St. Xavier's College for Women

Aluva

**COMPUTATIONAL ANALYSIS OF
EEG SIGNALS UNDERLYING AN
INTEGRATED MIND BODY
RELAXATION TECHNIQUE**

Project report by

KARTHIKA VENUKUMAR

(Reg no: 190011018863)

In partial fulfilment for the award of degree of

MASTER OF SCIENCE IN PHYSICS

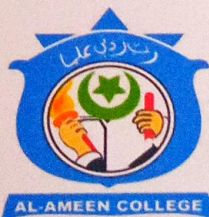
(2019-2021)

Under the guidance of

Dr. Sibi K.S

Assistant professor and Head, Department of Physics

University of Kerala, Kariavattom, Thiruvananthapuram



Department of Physics

AL-AMEEN COLLEGE, EDATHALA, ALUVA

(M.G University)



Dr. Sibi K. S.
Assistant Professor and Head
Department of Physics

University of Kerala
Thiruvananthapuram-695034
sibi@keralauniversity.ac.in

Certificate

Certified that the work presented in the project work entitled “Computational analysis of EEG signals underlying an integrated mind body relaxation technique” is an authentic record of bonafide research work done by KARTHIKA VENUKUMAR, under my guidance and supervision in the Department of Physics, University of Kerala, Thiruvananthapuram 695581 and no part of it has been included in any other thesis submitted previously for the award of any degree. It is also certified that plagiarism checking has been affected using the URKUND software approved by the UGC/University and that no plagiarism has been found in this thesis.

Kariavattom

13/05/2021

A handwritten signature in blue ink, appearing to be "Sibi K S".

Sibi K S
(Guide)

