CENTRAL UNIVERSITY OF KERALA
केरल केन्द्रीय विश्वविद्यालय
DEPARTMENT OF PHYSICS

Si: No:	Name Of Student	Register Number	Year of Admission	Title Of Thesis	Guide	Type Of Work	Place Of Work
1	AADITHIA MOHANAN	PPH051901	2019	EFFECT OF ANNEALING ON STRUCTURAL AND OPTICAL PROPERTIES OF Bi2Te3 THIN FILMS GROWN BY RF SPUTTERING	Prof. K J Thomas	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
2	ABHISHEK MALLICK	PPH051902	2019	Synthesis and Characterisation of copper ferrite nanoparticles prepared by co-precipitation method	Dr. S C Sahoo	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
3	ABINAYA A KAMATH	PPH051903	2019	SYSTEMATIC STUDY OF FISSION FRAGMENT MASS DISTRIBUTION IN 40Ca + 176Yb REACTION	Dr. E Prasad	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
4	AHAMMED ALI NASEEF. P	PPH051904	2019	Structural, Optical and Magnetic Studies of Metal / Co-Metal Substituted ZnS Nano-structures and it's comparison with the Nano-composites	Dr. Swapna S Nair	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
5	AKHILA K	PPH051905	2019	SYNTHESIS AND CHARACTERIZATION OF COBALT AND MANGANESE SUBSTITUTED TIN DISULPHIDE NANOSTRUCTURES	Dr. Aneesh P M	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
6	ANASWARA RAMAKRISHNAN	PPH051906	2019	A STUDY ON THE PHOTOCATALYTIC PROPERTIES OF ZNS AND ALUMINIUM	Dr. Swapna S Nair	M.Sc. Dissertation work	Department of Physics, Central University of Kerala

				SUBSTITUTED ZNS USING SUNSET YELLOW AND RHODAMINE-B DYES			
7	ANEES K T	PPH051907	2019	INVESTIGATION ON STRUCTURAL AND OPTICAL PROPERTIES OF COPPER DOPED BISMUTH TELLURIDE THIN FILMS DEPOSITED BY CO-SPUTTERING	Prof. K J Thomas	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
8	APARNA K K	PPH051908	2019	DEVELOPING COLORIMETRIC SENSOR FOR TYROSINE USING L-CYSTEINE PROTECTED COPPER NANOPARTICLES	Dr. Swapna S Nair	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
9	ARYA RAJ	PPH051909	2019	Solvothermal Synthesis of Bismuth Telluride nanoparticles	Prof. K J Thomas	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
10	ASWATHI P K	PPH051910	2019	Characterisation of cobalt and manganese substituted Vanadium Disulphide Nanostructure	Dr. Aneesh P M	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
11	ATHIRA M NAIR	PPH051911	2019	STUDY OF ZnS NANOSTRUCTURES AND METAL SUBSTITUTED ZnS NANOSTRUCTURES	Dr. Swapna S Nair	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
12	BHABANI SANKAR SAHOO	PPH051912	2019	Synthesis and Characterization of Cobalt Substituted M-type Ba0.5Sr0.5Fe12O19 Nanoparticles Prepared by Modified Sol-gel Method	Dr. S C Sahoo	M.Sc. Dissertation work	Department of Physics, Central University of Kerala

13	BISWAJITH SAMAL	PPH051913	2019	Synthesis and Characterization of Nano crystalline Barium Strontium Hexaferrite Prepared by Sol-Gel Auto combustion method	Dr. S C Sahoo	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
14	CHANDNI S	PPH051914	2019	Metal Substituted ZnS Nanoparticles for Dye Degradation Application	Dr. Swapna S Nair	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
15	DIVYA M	PPH051915	2019	Structural, Optical and Electrochemical Study of ZnS Nanostructures	Dr. Swapna S Nair	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
16	GOURI P	PPH051916	2019	Identification of New B-Type Emission Line (Be) stars using LAMOST DR5		M.Sc. Dissertation work	Department of Physics, Central University of Kerala
17	VISHAK KUMAR TIWARI	PPH051937	2019	Structural and Magnetic studies of Coper Ferrite Nanoparticles Prepared by Co-precipitation Method.	Dr. S C Sahoo	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
19	THOTADA PAVAN KUMAR	PPH051936	2019	Structural and optical characterisation of Bismuth Selenide Thin Film Prepared by RF Magnetron Sputtering	Prof. K J Thomas	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
20	MADDURU SATYA BABU	PPH051919	2019	Structural and Optical Properties of Bismuth Selenide Thin Films Grown by RF Magnetron Sputtering	Prof. K J Thomas	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
21	MEGHNA M	PPH051920	2019	Structural, Optical and Electrical Study of ZnxMn1-xS nanoparticles	Dr. Swapna S Nair	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
22	NANDHA KISHOR P	PPH051921	2019	SYNTHESIS AND CHARACTERIZATION OF CuS AND Cu2S NANOPARTICLES	Dr. Swapna S Nair	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
23	NANDHU SAJEEV	PPH051922	2019	STRUCTURAL, OPTICAL AND ELECTRICAL	Dr. Swapna S Nair	M.Sc. Dissertation	Department of Physics, Central University of

				CHARECTERISATION OF Cu-SUBSTITUTED ZnS NANOPARTICLES		work	Kerala
24	NIMMY SARAH ALEX	PPH051923	2019	Phenomenological Study of Neutrino Oscillation		M.Sc. Dissertation work	Department of Physics, Central University of Kerala
25	NITHEESH PRABA M	PPH051924	2019	Characterization of Stannous oxide (SnO2) Thin Films Grown By Spin Coating Method	Dr. P.M. Aneesh	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
26	PARVATHY M R	PPH051925	2019	HEAVY ION SUB-BARRIER FUSION REACTION	Dr. E Prasad	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
27	PINKY K	PPH051926	2019	Effect of reaction time on solvothermally synthesized Bismuth Selenide (Bi_2Se_3) nanoparticles	Prof. K J Thomas	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
28	RAHUL MURALI	PPH051927	2019	Fission Fragment Angular Distribution of 28Si+180Hf and 30Si+180Hf Reactions	Dr. E Prasad	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
29	RISHI CHAURASIA	PPH051928	2019	Implementation of certain Quantum Algorithms	Prof. Vincent Mathew	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
30	ROSHNI BENNY	PPH051929	2019	Reaction Dynamics in Heavy-Ion Collision Using Ca Beams	Dr. E Prasad	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
31	SABEEL P K	PPH051930	2019	Fission Fragment Angular Distribution of 28Si+180Hf and 30Si+180Hf Reactions	Dr. E Prasad	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
32	SEENATH BASHEER	PPH051931	2019	HEAVY ION SUB-BARRIER FUSION REACTION	Dr. E Prasad	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
33	SHABNA K M	PPH051932	2019	Effect of Nickel Substituted Tin	Dr. Aneesh	M.Sc.	Department of Physics,

				Disulphide Nanostructures in the Photocatalytic reduction of Rhodamine-B	P M	Dissertation work	Central University of Kerala
34	SREELAKSHMY T	PPH051933	2019	Synthesis and fabrication of CuI based p-n junction devices	Dr. Aneesh P M	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
35	SREERAJ R NAIR	PPH051934	2019	Implementation Certain Quantum Algorithms	Prof. Vincent Mathew	M.Sc. Dissertation work	Department of Physics, Central University of Kerala
36	SRUTHI C	PPH051935	2019	Synthesis and Characterisation of SnS_2-TiO_2 Nanocomposites for Photocatalytic degradation of Methylene Blue	Dr. Aneesh P M	M.Sc. Dissertation work	Department of Physics, Central University of Kerala

Department of Physics

Central University of Kerala

Kasaragod-671314, Kerala, India

CERTIFICATE

This is to certify that the project report entitled **"Structural, Optical and Magnetic Studies of Metal / Co-Metal Substituted ZnS Nano-structures and it's comparison with the Nano-composites"** is a bona fide record done by **AHAMMED ALI NASEEF. P** under my supervision and guidance in partial fulfilment of the requirement of the Degree of Master of Science in Physics from Central University of Kerala, Kasaragod.

Dr. Swapna S Nair
Associate Professor
Head of the department
Department of Physics
School of Physical Sciences
Central University of Kerala

विभागाध्यक्ष / Head
भौतिक विज्ञान विभाग / Department of Physics
केरल केंद्रीय विश्वविद्यालय / Central University of Kerala

DECLARATION

I, **Ahammed Ali Naseef. P** solemnly declare that the project report entitled **"Structural, Optical and Magnetic Studies of Metal / Co-Metal Substituted ZnS Nano-structures and it's comparison with the Nano-composites"** is based on the original work carried out by me at Department of Physics, Central University of Kerala, Kasaragod. The work presented in this project report has not been submitted for the award of any other degree or diploma in this university or any other university of India or abroad.

Ahammed Ali Naseef. P

Date:

Place:

SYNTHESIS AND CHARACTERIZATION OF SnS_2-TiO_2 NANOCOMPOSITES FOR PHOTOCATALYTIC DEGRADATION OF METHYLENE BLUE

By

SRUTHI C

Project report submitted
in partial fulfilment for the award of the Degree of

**MASTER OF SCIENCE
IN PHYSICS**

Department of Physics
CENTRAL UNIVERSITY OF KERALA
MAY 2021

DECLARATION

I **Sruthi C**, hereby, declare that this dissertation entitled **"Synthesis and characterization of TiO_2-SnS_2 nanocomposites for photocatalytic degradation of methylene blue"** is based on the innocent work done by me during the course of my Master of Science, at the Department of Physics, Central university of Kerala, Kasaragod. The work presented in this dissertation hasn't been submitted for the award of any other degree or diploma elsewhere.

Sruthi C

Place:

Date:

DEPARTMENT OF PHYSICS

CENTRAL UNIVERSITY OF KERALA

KASARAGOD

2019 - 2021

CERTIFICATE

This is to certify that the report entitled **HEAVY ION SUB-BARRIER FUSION REACTION** submitted by **PARVATHY M R**, to Central University of Kerala in partial fulfillment of the Masters degree in Physics is a bonafide record of the project work carried out by her under my guidance and supervision. This report in any form has not been submitted to any other University or Institute for any purpose.

Project Coordinator

Dr. E PRASAD
Assistant Professor
Department of Physics
Central University Of Kerala
Kasaragod

Head of the Department

Dr. SWAPNA S. NAIR
Associate Professor
Department of Physics
Central University of Kerala
Kasaragod

विभागाध्यक्ष / Head
भौतिकी विभाग / Department of Physics
केरल केन्द्रीय विश्वविद्यालय / Central University of Kerala

DECLARATION

I undersigned hereby declare that the project report "**HEAVY ION SUB-BARRIER FUSION REACTION**", submitted for partial fulfillment of the requirements for the award of degree of **Master of Science in Physics** of the Central University of Kerala, is a bonafide work done by me under supervision of **Dr. E Prasad**, Department of Physics, School of Physical Science, Central University of Kerala. This submission represents my ideas in my own words and where ideas or words of others have been included, I have adequately and accurately cited and referenced the original sources. I also declare that I have adhered to ethics of academic honesty and integrity and have not misrepresented or fabricated any data or idea or fact or source in my submission. I understand that any violation of the above will be a cause for disciplinary action by the institute and/or the University and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been obtained. This report has not been previously formed the basis for the award of any degree, diploma or similar title of any other University.

Place: PERIYE
Date: 25-05-2021

PARVATHY M R

Implementation of certain Quantum Algorithms

Sreeraj R Nair
Department of Physics
Central University of Kerala

A thesis submitted for the degree of
M.Sc Physics

Reg.No.PPH051934

Certificate

This is to certify that the work entitled **Implementation of certain Quantum Algorithms** is the bonafide work done by **Mr.Sreeraj R Nair, Reg. No. PPH051934** at Central University of Kerala in partial fulfilment of the requirement for the award of the degree of Master of Science in Physics.

Dr. Swapna S Nair
Head of the department
Department of Physics,
Central University of Kerala

Prof. Vincent Mathew
Professor
Department of Physics,
Central University of Kerala

विभागाध्यक्ष / Head
भौतिक विज्ञान विभाग / Department of Physics
केरल केंद्रीय विश्वविद्यालय / Central University of Kerala

Examiner:-

Declaration

I hereby declare that the thesis entitled **"Implementation of certain Quantum Algorithms"** submitted for the award of Master of Science of Central University of Kerala is based on the authentic work done by me under the guidance of **Prof. Vincent Mathew**, Professor, Department of Physics, Central University of Kerala and this work has not been included in any other thesis submitted previously for the award of any other degree.

Sreeraj R Nair
Department of Physics
Central University of Kerala

Tejaswini Hills, Periye 671316
May 2021

EFFECT OF NICKEL SUBSTITUTED TIN DISULFIDE NANOSTRUCTURES IN THE PHOTOCATALYTIC REDUCTION OF RHODAMINE-B

BY

SHABNA K M

PPH051932

Project report submitted

in partial fulfilment for the award of degree of

MASTER OF SCIENCE

IN PHYSICS

Department of Physics

CENTRAL UNIVERSITY OF KERALA

MAY 2021

CERTIFICATE

This is to certify that the project report entitled "EFFECT OF NICKEL SUBSTITUTED TIN DISULFIDE NANOSTRUCTURES IN THE PHOTOCATLYTIC REDUCTION OF RHODAMINE-B" is a bonafide record done by SHABNA K M under my supervision and guidance in partial fulfillment of the requirement of the Degree of Master of Science in Physics from Central University of Kerala, Kasaragod.

Dr Aneesh P M
Assistant Professor
Department of Physics
School of Physical Sciences
Central University of Kerala

DECLARATION

I, SHABNA K M solemnly declare that the project report **EFFECT OF NICKEL SUBSTITUTED TIN DISULFIDE NANOSTRUCTURES IN THE PHOTOCATALYTIC REDUCTION OF RHODAMINE-B** is based on my own work carried out during the course of my study under the supervision of Dr Aneesh P M, Assistant Professor, Department of Physics, Central University of Kerala. I further certify that this report is written by me and this work has not been submitted to any other institution for any other degree/diploma/certificate in this university or any other university of India or abroad.

SHABNA K M

Place:

Date:

Central University of Kerala
Department of Physics

Project report submitted in partial fulfilment for the award of the

Degree of in

Master of Science

in

Physics

Effect of reaction time on solvothermally synthesized Bismuth Selenide (Bi_2Se_3) nanoparticles

by

Pinky K
PPH051926

CERTIFICATE

This is to certify that the project report entitled " **Effect of reaction time on solvothermally synthesized Bismuth Selenide** (Bi_2Se_3) **nanoparticles** ", is a bonafide record of work done by Ms.Pinky, Reg.No. PPH051926 under my supervision in partial fulfilment of the requirement of the Degree of Mater of Science in Physics from Central University of Kerala, Kasargod.

Dr. KJ Thomas
Professor
Department of Physics
School of Physical Sciences
Central University of Kerala

DECLARATION

I Pinky K, declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I declare that I have properly and accurately acknowledged all sources used in the production of this report. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission.

Pinky K

May 25, 2021

HEAVY ION SUB-BARRIER FUSION REACTION

A PROJECT REPORT

Submitted by

SEENATH BASHEER

Reg.No. PPH051931

to

Central University of Kerala

in partial fulfillment of the requirements for the award of the Degree

of

Masters of Science

In

PHYSICS

DEPARTMENT OF PHYSICS

CENTRAL UNIVERSITY OF KERALA

KASARGOD

DEPARTMENT OF PHYSICS

CENTRAL UNIVERSITY OF KERALA

KASARGOD

2019 - 2021

CERTIFICATE

This is to certify that the report entitled **HEAVY ION SUB-BARRIER FUSION REACTION** submitted by **SEENATH BASHEER**, to Central University of Kerala in partial fulfillment of the Masters degree in Physics is a bonafide record of the project work carried out by her under my guidance and supervision. This report in any form has not been submitted to any other University or Institute for any purpose.

Project Coordinator

Dr. E. Prasad
Assistant Professor
Dept. of Physics
Central University of Kerala
Kasargod

Head of the Department

Dr. Swapna S. Nair
Associate Professor
Dept. of Physics
Central University of Kerala
Kasargod

DECLARATION

I undersigned hereby declare that the project report "**HEAVY ION SUB-BARRIER FUSION REACTION**" submitted for partial fulfillment of the requirements for the award of degree of **Master of Physics** of the Central University of Kerala, is a bonafide work done by me under supervision of **Dr. E. Prasad**, Department of Physics, School of Physical Science, Central University of Kerala. This submission represents my ideas in my own words and where ideas or words of others have been included, I have adequately and accurately cited and referenced the original sources. I also declare that I have adhered to ethics of academic honesty and integrity and have not misrepresented or fabricated any data or idea or fact or source in my submission. I understand that any violation of the above will be a cause for disciplinary action by the institute and/or the University and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been obtained. This report has not been previously formed the basis for the award of any degree, diploma or similar title of any other University.

Place: PERIYE

Date: 25-05-2021

SEENATH BASHEER

SYNTHESIS AND CHARACTERIZATION OF COBALT AND MANGANESE SUBSTITUTED TIN DISULPHIDE NANOSTRUCTURES

By

AKHILA K

PPH051905

Project report submitted

In partial fulfilment for the award of degree

MASTER OF SCIENCE

IN PHYSICS

Department of Physics,

CENTRAL UNIVERSITY OF KERALA

MAY 2021

CERTIFICATE

This is to certify that the project report entitled "**SYNTHESIS AND CHARACTERIZATION OF COBALT AND MANGANESE SUBSTITUTED TIN DISULFIDE NANOSTRUCTURES**", is a bona fide record of project work carried out by **AKHILA K** under my supervision and guidance in partial fulfilment of the requirement of the Degree of Master of Science in Physics from Central University of Kerala, Kasaragod.

Dr Aneesh P M

Assistant Professor

Department of Physics

School of physical Sciences

Central University of kerala

DECLARATION

I, Akhila K solemnly declare that the project report '**SYNTHESIS AND CHARACTERISATION OF COBALT AND MANGANESE SUBSTITUTED TIN DISULFIDE NANOSTRUCTURES**' is based on my own work carried out during the course of my study under the supervision of Dr Aneesh P M, Assistant Professor, Department of Physics, Central University of Kerala. I further certify that this report is written by me and this work has not been submitted to any other institution for any other degree/diploma/certificate in this university or any other university of India or abroad.

AKHILA K

Place :

Date :

Synthesis and fabrication of CuI based p-n junction devices

By

SREELAKSHMY T
PPH051933

Project report submitted
in partial fulfilment for the award of the Degree of

MASTER OF SCIENCE
IN PHYSICS

Department of Physics,
CENTRAL UNIVERSITY OF KERALA
MAY 2021

CERTIFICATE

This is to certify that the project report entitled **Synthesis and fabrication of CuI based p-n junction devices**, is a bona fide record of the M.Sc.research project done by Ms.Sreelakshmy T under my guidance in the Department of Physics, School of Physical Sciences, Central University of Kerala. I also certify that this report is completely written by the student and sources of information used from other sources are mentioned in the report and references of the same

Dr. P.M. Aneesh

Department of Physics

School of Physical Sciences

Central University of Kerala

Kasaragod

DECLARATION

I hereby declare that this report is a bonafide record of the research work done by me under the guidance of Dr. P. M. Aneesh, Assistant Professor, Department of Physics, Central University of Kerala. Wherever contributions of others are involved, every effort is made to indicate this clearly with due reference to the literature. I also declare that this report is written by me and has not been submitted for any previous degree or diploma

Sreelakshmy T

Place: Periya, Kasaragod

Date : 25-05-2021

PHENOMENOLOGICAL STUDY OF NEUTRINO OSCILLATION

By

Nimmy Sarah Alex
PPH051923

under the supervision of

Prof. Rukmani Mohanta
University of Hyderabad

Submitted to the partial fulfillment for the award of
the Degree of

MASTER OF SCIENCE IN PHYSICS

at the

Department of Physics
School of Physical Sciences
Central University of Kerala

25 May 2021

CERTIFICATE

This is to certify that the project entitled 'Phenomenological Study of Neutrino Oscillation' submitted by Nimmy Sarah Alex for the partial fulfillment of the degree Master of Science in Physics in the Department of Physics, School of Physical Sciences, Central University of Kerala, during the period 2019-2021 comprises the results of independent and original work done by the candidate under my guidance.

Prof. Rukmani Mohanta
School of Physics
University of Hyderabad

DECLARATION

I, Nimmy Sarah Alex, hereby declare that the project 'Phenomenological Study of Neutrino Oscillation' is based on my work under the guidance of Prof. Rukmani Mohanta, School of Physics, University of Hyderabad. This work has not been previously submitted elsewhere and is for the partial fulfillment of the degree of Master of Science in Physics.

Nimmy Sarah Alex

Periye
25 May 2021

DEPARTMENT OF PHYSICS
CENTRAL UNIVERSITY OF KERALA
KASARGOD
2019 - 2021

CERTIFICATE

This is to certify that the report entitled **Fission Fragment Angular Distribution of $^{28}Si+^{180}Hf$ and $^{30}Si+^{180}Hf$ Reactions** submitted by **RAHUL MURALI**, to Central University of Kerala in partial fulfillment of the Masters degree in Physics is a bonafide record of the project work carried out by him under my guidance and supervision. This report in any form has not been submitted to any other University or Institute for any purpose.

Project Coordinator

Dr. E. Prasad
Assistant Professor
Dept. of Physics
Central University of Kerala
Kasargod

DECLARATION

I undersigned hereby declare that the project report "**Fission Fragment Angular Distribution of $^{28}Si+^{180}Hf$ and $^{30}Si+^{180}Hf$ Reactions**" submitted for partial fulfillment of the requirements for the award of degree of **Master of Physics** of the Central University of Kerala, is a bonafide work done by me under supervision of **Dr. E. Prasad**, Department of Physics, School of Physical Science, Central University of Kerala. This submission represents my ideas in my own words and where ideas or words of others have been included, I have adequately and accurately cited and referenced the original sources. I also declare that I have adhered to ethics of academic honesty and integrity and have not misrepresented or fabricated any data or idea or fact or source in my submission. I understand that any violation of the above will be a cause for disciplinary action by the institute and/or the University and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been obtained. This report has not been previously formed the basis for the award of any degree, diploma or similar title of any other University.

Place: Kasaragod
Date:25-05-2021

Rahul Murali

Structural , optical and electrical study of $Zn_XMn_{1-X}S$ nanoparticles

Project submitted to

Central University Of Kerala

In the partial fulfillment of the requirements for the award of master's degree of Physics

Department of Physics

Central University of Kerala
Kasaragod-671314, Kerala, India

CERTIFICATE

This is to certify that the dissertation entitled **Structural , optical and electrical study of $Zn_xMn_{1-x}S$ nano particles** is an authentic record of project work carried out by **Meghna M** at school of Mathematical and Physical Sciences and under the supervision and guidance of **Dr. Swapna S.Nair**, Assistant Professor, Department of Physics, Central University of Kerala, in partial fulfillment of the requirement for the Degree of **Master of Science in Physics** of the **Central University of Kerala, Kasaragod**. The work presented in this dissertation has not been submitted for the award of anydegree or diploma elsewhere.

DECLARATION

I **Meghna M** , hereby, declare that this dissertation entiteled **Structural , optical and electrical study of $Zn_XMn_{1-X}S$ nano particles** is based on the original work done by me at the Department of Physics, **Central University of Kerala**, Kasaragod. The work presented in this dissertation has not been submitted for theaward of any other degree or diploma elsewhere.

Date: Meghna M

Place:

STRUCTURAL, OPTICAL AND ELECTRICAL CHARECTERISATION OF Cu-SUBSTITUTED ZnS NANOPARTICLES

NANDHU SAJEEV

Department of Physics
School of Physical Science
Central University Of Kerala

Submitted in partial satisfaction of the requirement for the
Degree of Master Of Science
In Physics

Supervisor: Dr Swapna S Nair

May, 2021

DEPARTMENT OF PHYSICS

Central University of Kerala

Kasaragod, Kerala, India-671316

CERTIFICATE

This is to certify that the project report entitled **"STRUCTURAL, OPTICAL AND ELECTRICAL CHARECTERISATION OF Cu-SUBSTITUTED ZnS NANOPARTICLES"** is a bonafide record of project work carried out by **NANDHU SAJEEV** under my supervision and guidance in partial fulfilment of the requirement of the Degree of Master of Science in Physics from Central University of Kerala, Kasaragod.

Dr. SWAPNA S NAIR

Associate Professor

Department of Physics

School of Physical Sciences

Central University of Kerala

विभागाध्यक्ष / Head
भौतिक विज्ञान विभाग / Department of Physics
केरल केन्द्रीय विश्वविद्यालय / Central University of Kerala
कासरगोड, केरल / Kasaragod, Kerala
पिन / PIN-671316

DECLARATION

I NANDHU SAJEEV hereby declare that the dissertation entitled "**STRUCTURAL, OTICAL AND ELECTRICAL CHARECTERISATION OF Cu-SUBSTITUTED ZnS NANOPARTICLES**" submitted for the partial fulfilment of the requirement of Master Of Science in Physics under the faculty of science of Central University Of Kerala is bona fide work done by me during the year 2019-2021 in Central University Of Kerala.

NANDHU SAJEEV

REG. NO: PPH051922

DEVELOPING COLORIMETRIC SENSOR FOR TYROSINE USING SYNTHESIZED L-CYSTEIN PROTECTED COPPER NANOPARTICLES

Dissertation

Submitted in partial fulfilment of the requirements of the degree

Master of Science in Physics

By,

APARNA K K

Roll No: PPH051908

Under the guidance of

Dr Swapna S Nair

DEPARTMENT OF PHYSICS CENTRAL UNIVERSITY OF KERALA

MAY 2021

CERTIFICATE

This is to certify that the dissertation entitled " **DEVELOPING COLORIMETRIC SENSOR FOR TYROSINE USING SYNTHESIZED L-CYSTEIN PROTECTED COPPER NANOPARTICLES** " is an authentic record of project work carried out by **APARNA K K** , at Department of Physics , under my guidance and supervision on partial fulfillment of requirement of the award of Masters in Physics, from **Central University of Kerala, Kasaragod,** during the academic year 2020-2021

Dr. SWAPNA S NAIR

Project Guide

Dr. SWAPNA S NAIR

Head, Department of Physics

-Signature-

Internal Examiner

-Signature-

External Examiner

DECLARATION

I **APARNA K K** , here by declare that this dissertation entitled **"DEVELOPING COLORIMETRIC SENSOR FOR TYROSINE USING SYNTHESIZED L-CYSTEIN PROTECTED COPPER NANOPARTICLES "** is based on the original work done by me during the course of my Masters of Science , at central university of Kerala, Kasaragod. The work presented in this dissertation hasn't been submitted for the award of any other degree or diploma elsewhere.

APARNA K K

Place :
Date :

CERTIFICATE

This is to certify that the dissertation entitled ***Structural, Optical and Electrochemical Study Of ZnS Nanostructures*** *is an authentic record of project work carried out by* ***Divya M*** *under the supervision and guidance of me on partial fulfillment of requirement for the award of* ***Master of Science in Physics****, from* ***Central University Of Kerala, Kasaragod****, during the academic year* ***2019-2021****.*

Dr Swapna S. Nair
Head Of the Department , Physics
Central University Of Kerala

DECLARATION

*I **Divya M**, hereby declare that this dissertation entitled **Structural, Optical And Electrochemical Study Of ZnS Nanostructures** is based on the original work done by me at the **Department of Physics, Central University Of Kerala, Kasaragod**.The work presented in this dissertation has not been submitted for the award of any other degree or diploma elsewhere.*

Date *Divya M*

Place

INVESTIGATION ON STRUCTURAL AND OPTICAL PROPERTIES OF COPPER DOPED BISMUTH TELLURIDE THIN FILMS DEPOSITED BY CO-SPUTTERING

By

ANEES K T

Project report submitted
in partial fulfilment for the award of the Degree of

MASTER OF SCIENCE
IN PHYSICS

DEPARTMENT OF PHYSICS
CENTRAL UNIVERSITY OF KERALA
MAY 2021

CERTIFICATE

This is to certify that the project report entitled **Investigation on structural and optical properties of copper doped bismuth telluride thin films deposited by co-sputtering** is a bona fide record of work done by **Mr. Anees K T, Reg.No. PPH051907** of Department of Physics, School of Physical sciences, Central University of Kerala in partial fulfilment of the requirement for the award of the Degree of Master of Science in Physics during the period 2019-2021, under my guidance. It has not formed the basis for the award of any degree/diploma or other similar title of any candidate of any university.

Head
Department of Physics
Central University of Kerala
Tejaswini Hills, Periye
Kasaragod-671316

Prof. Dr. K. J. Thomas
Department of Physics
School of Physical Sciences
Central University of Kerala

DECLARATION

I hereby declare that the project report entitled **Investigation on structural and optical properties of copper doped bismuth telluride thin films deposited by co-sputtering** submitted to Department of Physics, School of Physical Sciences, Central University of Kerala in partial fulfilment of the requirement for the award of Degree of Master of Science in Physics during the period 2019-2021, is a record of original work done by me under the supervision and guidance of **Prof. Dr. K. J. Thomas**, Department of Physics, School of Physical Sciences, Central University of Kerala and that it has not formed the basis for the award of any degree/diploma or other similar title of any candidate of any other university.

Anees K T

Place: Kasaragod

Date : 25 May 2021

M.Sc Thesis

STUDY OF ZnS NANOSTRUCTURES AND METAL SUBSTITUTED ZnS NANOSTRUCTURES

Thesis submitted to

CENTRAL UNIVERSITY OF KERALA

In partial fulfilment of the requirements for the award of master's degree in physics

By

ATHIRA M NAIR

II YEAR M.SC PHYSICS

PPH051911

CENTRAL UNIVERSITY OF KERALA

2021

CERTIFICATE

This is to certify that the project entitled ***Study of ZnS Nanostructures and Metal Substituted ZnS Nanostructures*** *is an authentic record of project work carried out by* ***ATHIRA M NAIR*** *under the supervision and guidance of* ***Dr Swapna S. Nair****, Associate Professor, Department of physics, Central University of Kerala, in partial fulfilment of the requirement for the Degree of* ***Master of Science in Physics*** *of the* ***Central University of Kerala****, Kasaragod. The work presented in this dissertation has not been submitted for the award of any degree or diploma elsewhere.*

Dr Swapna S. Nair

Associate Professor

Dept. of Physics

School of Physical Sciences

Central University of Kerala

DECLARATION

I ***ATHIRA M NAIR,*** *hereby declare that this dissertation entitled* ***Study of ZnS Nanostructures and Metal Substituted ZnS Nanostructures*** *is based on the original work done by me at the Department of Physics,* ***Central University of Kerala****, Kasaragod. The work presented in this dissertation has not been submitted for the award of any other degree or diploma elsewhere.*

ATHIRA M NAIR

Date: 25/05/2021

Place: Periya

Central University of Kerala
Department of Physics

Project report submitted in partial fulfilment for the award of the

Degree of in

Master of Science

in

Physics

Solvothermal Synthesis of Bismuth Telluride Nanoparticles

by

Arya Raj
PPH051909

CERTIFICATE

This is to certify that the project report entitled **"Solvothermal Synthesis of Bismuth Telluride nanoparticles"**, is a bona fide record of work done by Ms.Arya Raj, PPH051909 under my supervision in partial fulfilment of the requirment of the Degree of Master of Science in Physics from Central University of Kerala, Kasaragod.

Dr. K J Thomas

Professor

Department of Physics

School of Physical Sciences

Central University of Kerala

DECLARATION

I Arya Raj, hereby declare that this dissertation entitled " Solvothermal Synthesis of Bismuth Telluride Nanoparticles" is based on the innocent work done by me during the course of my Master of Science, at the Department of Physics, Central University of Kerala, Kasaragod. The work presented in this dissertation hasn't been submitted for the award of any other degree or diploma elsewhere.

Arya Raj

Place:Periye

Date :25/5/2021

PROJECT REPORT ON

REACTION DYNAMICS IN HEAVY-ION COLLISIONS USING Ca BEAMS

Submitted by

ROSHNI BENNY

PPH051929

Dissertation submitted in partial fulfilment of the requirements for the degree of

MASTER OF SCIENCE IN PHYSICS

Department of Physics

School of Physical Sciences

Central University of Kerala

25 May 2021

CERTIFICATE

This is to certify that the project entitled ***"Reaction Dynamics in Heavy-ion Collisions using Ca Beams"*** *submitted by* ***Roshni Benny*** *for the partial fulfilment of the degree of* ***Master of Science in Physics*** *in the Department of Physics, School of Physical Sciences, Central University of Kerala, during the period 2019-2021 comprises of the results of independent and original work done by the candidate under my guidance.*

Chairperson / Head
Department of Physics
University of Kerala
Periye

Dr. E. Prasad
Assistant Professor, Department of Physics
School of Physical Sciences
Central University of Kerala

DECLARATION

I, Roshni Benny, hereby declare that the project "Reaction Dynamics in Heavy-ion Collisions using Ca Beams" is an account of the work done by me under the guidance and supervision of Dr. E. Prasad, Department of Physics, School of Physical Sciences, Central University of Kerala. This work was wholly done for the partial fulfilment of the degree Master of Science in Physics. The material presented in this is original and has not been submitted elsewhere, to the best of my knowledge. I acknowledge that copyright of published works contained within this dissertation resides with the copyright holders of those works.

Roshni Benny
PPH051929

25 May 2021

SYSTEMIC STUDY OF FISSION FRAGMENT MASS DISTRIBUTION IN $^{40}Ca + {}^{176}Yb$ REACTION

Project report submitted in partial fulfilment for the award of the Degree of

MASTER OF SCIENCE IN PHYSICS

by

ABINAYA A KAMATH
(PPH051903)

to the

DEPARTMENT OF PHYSICS
CENTRAL UNIVERSITY OF KERALA

May, 2021

CERTIFICATE

This is to certify that the project entitled **"Systemic study of fission fragment mass distribution in $^{40}Ca+^{176}Yb$ reaction "** submitted by **Abinaya A Kamath** for the partial fulfilment of the degree **Master of Science in Physics** in the Department of Physics, School of Physical Sciences, Central University of Kerala, during the period 2019-2021 comprises the results of independent and original work done by the candidate under my guidance.

Dr. E. Prasad
Assistant Professor, Department of Physics
School of Physical Sciences
Central University of Kerala

DECLARATION

I, **Abinaya A Kamath**, hereby declare that the project "**Systemic study of fission fragment mass distribution in $^{40}Ca+^{176}Yb$ reaction**" is based on the work done by me under the acclaimed guidance and supervision of Dr. E Prasad, Department of Physics, School of Physical Sciences, Central University of Kerala. This work was wholly done for the partial fulfillment of the degree Master of Science in Physics and has not been previously submitted elsewhere.

Abinaya A Kamath

M.Sc Thesis

A STUDY ON THE PHOTOCATALYTIC PROPERTIES OF ZNS AND ALUMINIUM SUBSTITUTED ZNS USING SUNSET YELLOW AND RHODAMINE-B DYES

Submitted by

ANASWARA RAMAKRISHNAN

Reg. No.PPH051906

In partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

in **PHYSICS**

Under the Supervision of

Dr. SWAPNA S NAIR

DEPARTMENT OF PHYSICS

CENTRAL UNIVERSITY OF KERALA

MAY 2021

CENTRAL UNIVERSITY OF KERALA

CERTIFICATE

This is to certify that the dissertation entitled **A study on the photocatalytic properties of ZnS and Aluminium substituted ZnS using Sunset yellow and Rhodamine-B dyes** is an authentic record of project work carried out by **ANASWARA RAMAKRISHNAN** under the supervision and guidance of **Dr. SWAPNA S NAIR**, Associate Professor, Department of Physics, Central University of Kerala, in partial fulfillment of the requirements for the Degree of Master of Science in Physics of the Central University of Kerala, Kasaragod. The work presented in this dissertation has not been submitted for the award of any degree or diploma elsewhere.

Dr. Swapna S.Nair
Associate Professor
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/ Head
/ Department of Physics
/ Central University of Kerala
/ Tejaswini Hills, Periye
, Kasaragod-671316

DECLARATION

I Anaswara Ramakrishnan, hereby, declare that this dissertation entitled ***"A study on the photocatalytic properties of ZnS and Aluminium substituted ZnS using Sunset yellow and Rhodamine-B dyes"*** is based on the original work done by me at the Department of Physics, Central University of Kerala, Kasaragod. The work presented in this dissertation has not been submitted for the award of any other degree or diploma elsewhere.

Periya
25-05-2021

Anaswara Ramakrishnan
Reg. No.PPH051906

CHARACTERIZATION OF COBALT AND MANGANESE SUBSTITUTED VANADIUM DISULPHIDE NANOSTRUCTURES

By

ASWATHI P K

Project report submitted
in partial fulfilment for the award of the Degree of

MASTER OF SCIENCE
IN PHYSICS

Department of Physics,
CENTRAL UNIVERSITY OF KERALA
MAY 2021

CERTIFICATE

This is to certify that the project report entitled **"CHARACTERIZATION OF COBALT AND MANGANESE SUBSTITUTED VANADIUM DISULPHIDE NANOSTRUCTURES"**, is a bonafide record of project work carried out by **Aswathi P K** under my supervision and guidance in partial fulfilment of the requirement of the Degree of Master of Science in Physics from **Central University of Kerala, Kasaragod**. Certified further that the matter embodied in this project is a genuine work done by the student and sources of information used are mentioned in the report and references of the same.

Dr Aneesh P M
Assistant Professor
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Chairperson / Head
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Central University of Kerala
Tejaswini Hills, Periye
Kasaragod-671316

DECLARATION

I **Aswathi P K** hereby declare that the project report entitled **"CHARACTERIZATION OF COBALT AND MANGANESE SUBSTITUTED VANADIUM DISULPHIDE NANOSTRUCTURES"** submitted by me to Central University of Kerala, Kasaragod in partial fulfillment of the requirement for the award of the Degree of Master of Science in Physics is a record of an original work done by me under the guidance of **Dr. P. M. Aneesh**, Assistant Professor, Department of Physics, Central University of Kerala. I further declare that the work reported in this project has not been submitted either in part or in full, for the award of any other degree or diploma.

Aswathi P K

Place: Periye,Kasaragod

Date : 25-05-2021