

RAJEEV GANDHI GOVT. P.G COLLEGE AMBIKAPUR



AMBIKAPUR SURGUJA (C.G)
Session- 2021-22

A Dissertation

Entitled

**'Study Of Measurement Of The
Attenuation Of The Optical Fiber**

*Submitted to Department of Physics in partial fulfilment
of the requirement of the degree of Masters of Science
in Physics .*

Guided By:-

Dr. S.K. Shrivastava
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Submitted By:-

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Place:-Ambikapur


(Dr. S.K. Shrivastava)

Department of physics

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RAJEEV GANDHI GOVT. P. G. COLLEGE
AMBIKAPUR



A DISSERTATION

entitled

**“A STUDY OF WIND ENERGY POTENTIAL IN INDIA:
CURRENT STATUS”**

Submitted to the Department of physics in partial fulfilment of the

Requirement for the degree of

Master of Science in physics

Session: 2021-2022

SUPERVISED BY

Dr. S. K. Srivastava

H.O. D. Physics

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SUBMITTED BY

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RAJEEV GANDHI P.G. COLLEGE AMBIKAPUR



AMBIKAPUR SURGUJA (C.G.)

Session – 2021-22

A Dissertation

Entitled

‘Study of thermo dynamical property on Schottky and Frenkel defect in Solid’

Submitted to **Department of Physics** in partial fulfilment of the requirement of degree of **Masters of Science in Physics** .

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DEPARTMENT OF PHYSICS

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Entitled

“The study of Zinc oxide thin film nanoparticles”

Submitted in partial fulfilment of the requirement for the

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PHYSICS”

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(signature of the H.O.D of physics)

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RAJEEV GANDHI GOVT. P.G. COLLEGE AMBIKAPUR



AMBIKAPUR SURGUJA (C.G.)

SESSION – 2021-22

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RAJEEV GANDHI GOVT. P.G. COLLEGE AMBIKAPUR



A DISSERTATION

Entitled

“STUDY OF ALL OPTICAL XOR, NOT, OR AND AND LOGIC GATES BASED ON 2D PHOTONIC CRYSTALS T-SHAPED WAVEGUIDE”

submitted in partial fulfil of the requiremet for the degree of
**MASTER OF SCIENCE IN
PHYSICS
2021-2022**

SUPERVISOR BY

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RAJEEV GANDHI GOVT. P.G COLLEGE AMBIKAPUR



AMBIKAPUR SURGUJA (C.G)

Session- 2021-22

A Dissertation

Entitled

**'Study Of Effect Of Doping On Semiconducting
Nanowires**

*Submitted to Department of Physics in partial fulfilment of
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Guided By:-

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**Rajiv Gandhi Govt. Autonomous
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“SOIL PHYSICS”

A DISSERTATION

Entitled

“STUDY OF SOIL PHYSICS”

Submitted to the **Department Of PHYSICS** in partial
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RAJEEV GANDHI GOVT. P.G. COLLEGE AMBIKAPUR



AMBIKAPUR, SURGUJA, C.G

Session:2021-22

A DISSERTATION

entitled

**“STUDY OF GRAVITATIONAL LENSING &
ITS CHARACTERISTICS
USING EINSTEIN’S GENERAL THEORY OF RELATIVITY
&
NEWTONION GR PREDICTIONS”**

*Submitted to the Department of Physics in partial fulfilment of the
requirement for the degree of
Master of Science in Physics*

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RAJEEV GANDHI GOVT .P.G. COLLEGE AMBIKAPUR SURGUJA (C.G.)



DEPARTMENT OF PHYSICS
A DISSERTATION

Entitled

**MICROWAVE RADATION ON HUMAN BRAIN &
HUMAN HEALTH”**

Submitted in partial fulfillment of the
Requirement for the degree of
Master of Science in

Physics

Session 2021-22

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is a record of

independent research work done by PRAGATI BHAGAT under my

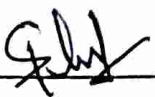
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Govt. Post Graduate Autonomous College Ambikapur Surguja

C.G. India in partial fulfilment for the award of the degree of M.Sc.

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for the award of any other degree or other title.



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Signature of
Principal

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RAJEEV GANDHI GOVT. P.G COLLEGE AMBIKAPUR



AMBIKAPUR SURGUJA (C.G)

SESSION- 2021-22

A DISSERTATION

ENTITLED

"Study of propagation of the electromagnetic wave in cylindrical Plasma column"

Submitted to Department of Physics in partial fulfilment of the requirement of the degree of Masters of Science in Physics .

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(Dr. S.K. Shrivastav)

Place:-Ambikapur

Department of physics

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**RAJEEV GANDHI GOVT. P. G. COLLEGE
AMBIKAPUR**



A DISSERTATION

entitled

**“A TRAFFIC SIGNAL CONTROL SYSTEM FOR
REDUCING THE EFFECTS OF TRAFFIC CONGESTION
IN URBAN ENVIRONMENT”**

Submitted to the Department of physics in partial fulfilment of the

Requirement for the degree of

Master of Science in physics

Session: 2021-2022

SUPERVISED BY

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This is to certify that the dissertation entitled "A TRAFFIC SIGNAL CONTROL SYSTEM FOR REDUCING THE EFFECTS OF TRAFFIC CONGESTION IN URBAN ENVIRONMENT" is a bonfire record of independent research work done by **PRITI BADAL** under my supervision during 2021-2022 submitted to the, Rajeev Gandhi Govt. P.G. Autonomous College, Ambikapur- 497001, Surguja (C.G.) India in partial fulfillment for the award of the degree of M.Sc. physics and that the dissertation has not previously formed the basis for the award of any other degree or other title.

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AMBIKAPUR SURGUJA (C.G)

Session- 2021-2022

A Dissertation

Entitled

**“STUDY OF SPECIFIC ABSORPTION RATE (SAR)
VALUE ON HUMAN HEALTH”**

*Submitted to Department of Physics in partial fulfilment of the
requirement of the degree of Masters of Science in Physics.*

Guided By:-
Dr. M.K.Maurya
Assistant Professor
(Dept. Of Physics
Rajeev Gandhi Govt. P.G
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Submitted By:-
SAKSHI SAHU
M.Sc. Physics
4th Semester
Enroll No.:-AS/20/17
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DEPARTMENT OF PHYSICS

**RAJEEV GANDHI POST GRADUATE
AUTONOMOUS COLLEGE, AMBIKAPUR,
SURGUJA, CHHATTISGARH.**

This is to certify that Sakshi Sahu has successfully completed the dissertation entitled, “**Study of Specific absorption rate(SAR) value on human health**” for requirement of the degree of Master of Science in Physics during the session 2021-22 under my supervision.



Signature
of the Supervisor



Signature
of the H.O.D. Physics

Signature
of the Principal

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**DIELECTRIC MATERIAL OF STUDY OF SILVER
NIOBATE(AgNbO_3) AND ITS MODIFIED
SYSTEM($\text{AgNb}_{1-x}\text{M}_x\text{O}_3$), WHERE M = Ta(Tantalum)**

A

**Project Report submitted In partial
Fulfilment for Degree Of M.Sc.**

Physics

Submitted by

Sandeep kumar ekka

Under the supervision of

DR S.K. SHRIVASTAVA

SESSION:- 2021-22



**Department of physics Rajeev Gandhi Govt. Post
Graduate Autonomous College Ambikapur Surguja (C.G.)**

Certificate

This is to certify that Sandeep kumar ekka has

Worked on the dissertation project entitle **DIELECTRIC MATERIAL OF STUDY OF SILVER NIOBATE(AgNbO₃) AND ITS MODIFIED SYSTEM(AgNb_{1-x}M_xO₃), WHERE M = Ta(Tantalum)**

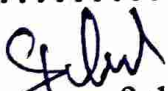
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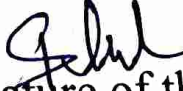
Of any other similar title.

It represents entirely independent work on the part

Of the candidates

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Supervisor

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Signature of the

H.O.D of physics

.....
Signature of the

principal

DATE:

PLACE: AMBIPAPUR

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RAJEEV GANDHI GOVT. P.G. COLLEGE AMBIKAPUR



AMBIKAPUR, SURGUJA (C.G.)

SESSION - 2021-22

A Dissertation

Entitled

“Study of Crystallography & Reciprocal Space of Higher oxides of Lanthanide using Electron & Neutron Diffraction”

Submitted to Department of Physics in partial fulfilment of the requirement of the degree of Master of Science in Physics.

Guided By:-

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Place – Ambikapur.


(Dr.M.K.Maurya)

Department of Physics.

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RAJEEV GANDHI GOVT. P.G. COLLEGE AMBIKAPUR



AMBIKAPUR SURGUJA (C.G)

SESSION 2021-22

A DESSERTATION

Entitled

“Study of asteroids passing over earth’s atmosphere using the data of closest approach method”

Submitted to **Department of Physics** partial fulfilment of the requirement of the degree of **Master of Science in Physics**.

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This is to certify that **Shubham Dwivedi** has successfully completed the dissertation entitled, “**Study of asteroids passing over earth’s atmosphere using the data of closest approach method**” for requirement of the degree of Master of Science in Physics during in the session 2021-22 under my supervision.

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A handwritten signature in black ink, appearing to be 'M.K. Maurya', written in a cursive style.

(Dr. M.K. Maurya)

Department of physics

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5

RAJEEV GANDHI GOVT. P.G COLLEGE AMBIKAPUR



AMBIKAPUR SURGUJA (C.G)
SESSION- 2020-21
A DISSERTATION
ENTITLED

"Microwave Measurements of Dielectric Properties of Sugarcane
Vegetation at C-Band and Comparison with Debye- Cole Dual
Dispersion Model "

Submitted to **Department of Physics** in partial fulfilment of the
requirement of the degree of **Masters of Science in Physics** .

Guided By:-

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(Dr. M.K Maurya)

Place:-Ambikapur

Department of physics

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RAJEEV GANDHI GOVT POST GRADUATE COLLEGE AMBIKAPUR



AMBIKAPUR SURGUJA (C.G)

Session- 2021-2022

A Dissertation

Entitled

**“INFLUENCE OF DIFFUSION FLUX AND BARRIER
ENERGY ON THE DIFFUSION OF SOLID”**

*Submitted to Department of Physics in partial fulfilment of the
requirement of the degree of Masters of Science in Physics.*

Guided By:-

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DEPARTMENT OF PHYSICS

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(SARGUJA, CHATTISGARH)

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This is to certify that the dissertation entitled “**INFLUENCE OF DIFFUSION FLUX AND BARRIER ENERGY ON THE DIFFUSION OF SOLID**” is a bonfire record of independent research work done by **SOUMYA KUMARI** under my supervision during 2021-2022 submitted to the , Rajeev Gandhi Government P.G. Autonomous College, Ambikapur-197001,Surguja (C.G.) India in partial fulfilment for the award of the degree of M.sc. physics and that the dissertation has not previously formed the bias for the award of any other degree or other title.

Signature

Of the supervisor

Signature

of the H.O.D physics

Signature

of the principal

CONTENTS

CHAPTER-1 1.INTRODUCTION

1.1 Solids are generally divided into three broad classes:-

- (a) Crystalline solid.
- (b) Non-crystalline (amorphous) solid.
- (c) Quasi-crystalline solid.

1.2 Example of crystalline solid:-

- (a) Atomic structure of diamond.
- (b) Atomic structure of sodium chloride.

1.3 Properties of crystalline solids.

1.4 Properties of non-crystalline (amorphous) solid.

1.5 Amorphous solid examples.

1.6 Quasi-crystalline solid.

1.7 There are different types of solid can be classified as:-

- (a) Microscopic description
- (b) Classes of solids.
- (c) Metals.
- (d) Minerals.
- (e) Ceramics.
- (f) Glass ceramics.
- (g) Organic solids.
- (h) Wood.
- (i) Polymers.
- (j) Composite materials.
- (k) Semi conductors.
- (l) Niño materials.
- (m) Biomaterials.

.1

Diffusion in solid.

(a) Introduction

(b) Diffusion mechanics.

2.2 There are four types of diffusion.

(a) Self- diffusion.

(b) Impurity-diffusion.

(c) Vacancy diffusion

(d) Interstitial diffusion.

2.3 Barrier Energy

2.4 Diffusion Flux

(a) definition of Fick's first law.

(b) alternative formulation of the first law .

(c) applications.

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CHAPTER-4 Results and Discussion

CHAPTER-5 Summary and Conclusion

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**RAJEEV GANDHI GOVT. POST GRADUATE COLLEGE,
AMBIKAPUR SURGUJA (C.G.)**



DEPARTMENT OF PHYSICS

**DYNAMIC CHARACTERIZATION OF SEMICONDUCTOR
LASERS AND INTENSITY MODULATORS**

DISSERTATION

**Submitted in partial fulfilment of the
Requirement for the degree of
Master of Science in
Physics**

Session : 2021 - 2022

Supervisor

**Dr. M. K. Maurya
(M. Sc. Phy. D.) Asst. Professor
(Dept. Of Physics)**

Submitted by

**SWATI TOPPO
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DEPARTMENT OF PHYSICS

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AMBIKAPUR SURGUJA
(CHATTISGARH)**

CERTIFICATE OF SUPERVISOR

This is to certify that the dissertation entitled "DYNAMIC CHARACTERIZATION OF SEMICONDUCTOR LASERS AND INTENSITY MODULATORS" is a bonfire record of independent research work done by SWATI TOPPO under my supervision during 2021 -2022 submitted to the , Rajeev Gandhi Govt. P.G. Autonomous College, Ambikapur- 497001, Surguja (C.G.) India in partial fulfilment for the award of the degree of M.Sc. physics and that the dissertation has not previously formed the basis for the award of any other degree or other or other title.

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Signature

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Signature

of the H.O.D. Physics

.....

Signature

of the Principle

Date :- 15/07/2022

Place :- AMBIKAPUR

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NUCLEAR SHELL MODEL

A Dissertation Submitted

to

RAJEEV GANDHI GOVT. P.G. ,
COLLEGE AMBIKAPUR (C.G.), INDIA

A partial fulfillment for the award of the Degree of

MASTER OF SCIENCE

In

PHYSICS

By

USHA SAHU (Roll No. - 220401023)

Under the Guidance of

Dr. S. K. SHRIVASTAVA

(Head of Department – Department of Physics)



DEPARTMENT OF PHYSICS

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COLLEGE, AMBIKAPUR (C.G.),
INDIA, PIN CODE – 497001


SESSION – 2020-22

CERTIFICATE

This is to certify that the report of the project submitted is an outcome of the project work entitled NUCLEAR SHELL MODEL carried out by USHA SAHU, Roll No. :- 220401023 & Enrollment No:- AS/20/24 . Carried out under my guidance and supervision for the award of Degree in Master of science in Physics of RAJEEV GANDHI GOVT.P.G. COLLEGE, AMIBKAPUR (C.G.), India.

To the best of my knowledge the report

- i) Embodies the work of the candidate him/herself,
- ii) Has duly been completed,
- iii) Fulfils the requirement of the Ordinance relating to the MSC degree of the University and
- iv) Is up to the desired standard for the purpose of which is submitted.


Dr. S.K. SHRIVASTAVA
H.O.D. Of Physics

Rajeev Gandhi Govt. P.G. College , Ambikapur (C.G.)

The project work as mentioned above is hereby being recommended and forwarded for examination and evaluation.



(Signature of Head of the Department with Seal)

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RAJEEV GANDHI GOVT. P.G. COLLEGE



A DISSERTATION

entitled

“THE EXPLANATION OF POSSIBILITY OF FASTER THAN LIGHT PARTICLE BY CMBR AND REDSHIFT”

SESSION :- 2021 -2022

Submitted to the Department of Physics in partial fulfillment of the Requirement for the degree of Master of Science in Physics

SUPERVISED BY: -

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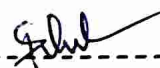
DEPARTMENT OF PHYSICS

RAJEEV GANDHI POST GRADUATE AUTONOMOUS
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CERTIFICATE OF SUPERVISOR

This is to certify that the dissertation entitled “**THE EXPLANATION OF POSSIBILITY OF FASTER THAN LIGHT PARTICLE BY CMBR AND REDSHIFT**” is a bonafide record of independent research work done by VARUN GAURAV SHUKLA under my supervision during 2021-2022 submitted to the , Rajeev Gandhi Government P.G. Autonomous College, Ambikapur- 497001, Surguja (C.G.) India in partial fulfillment for the award of the degree of M.Sc. physics and that the dissertation has not previously formed the basis for the award of any other degree or other title.



Signature of the
Supervisor

Date:

Place:



Signature of the
H.O.D. Physics

Signature of the
Principal

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