



A PROJECT REPORT

ON

“Evanescent Wave-Based Glucose Sensing Using Micro-Tapered Optical Fibers”

Submitted to the

Project paper submitted to Berhampur University towards the fulfilment
of the degree of

Master in Physics

Submitted by :

Ananya Priyadarshinee Parija

Roll.no.-24PHYS0022

MSc 2nd Year

Govt. Science College , Chatrapur



Under guidance of

Ms.Subhashree Mishra

Lecturer in Physics

Department of Physics

DECLARATION

I am Ananya Priyadarshinee Parija hereby declare that the project work entitled "Evanescent Wave-Based Glucose sensing using Micro-Tapered optical Fibers" submitted to Berhampur University. It is a record of an original work done by me under the guidance of **Ms. Subhashree Mishra, Lecturer in Physics, Department of Physics.**

This work has not been submitted previously, in part or full, for the award of any degree, diploma, fellowship, or any other similar title or recognition.

Ananya Priyadarshinee Parija
Ananya Priyadarshinee Parija



A PROJECT REPORT

ON

“Modeling of Resonant Tunnelling Phenomena in Multi-Quantum Well System”

Project paper submitted to Berhampur University towards the fulfilment of the degree of

Master in Physics

Submitted by :

Ashutosh Paikaray

Roll.no.-24PHYS0023

MSc 2nd Year

Govt. Science College , Chatrapur



Under guidance of

Ms.Subhashree Mishra

Lecturer in Physics

Department of Physics

DECLARATION

I am Asutosh paikaray hereby declare that the project work entitled "Modeling in resonant tunneling phenomena in multi-quantum well Systems" submitted to Berhampur University. It is a record of an original work done by me under the guidance of **Ms.Subhashree Mishra,Lecturer in Physics,Department of Physics.**

This work has not been submitted previously, in part or full, for the award of any degree, diploma, fellowship, or any other similar title or recognition

Ashutosh Paikaray

Ashutosh Paikaray



A PROJECT REPORT

ON

**SYNTHESIS & CHARACTERIZATION OF MAGNESIUM-DOPED
ZINC OXIDE NANOPARTICLES AND EXPLORING THEIR APPLICATIONS**

SUBMITTED TO THE

**Project Paper Submitted to Berhampur University towards
the fulfillment of the Degree of**

MASTER IN PHYSICS

SUBMITTED BY:

BATAKRUSHNA BEHERA

Roll No. 24PHYS0024, Regd. No.- 01804/2020

M.Sc 2nd Year

Govt. Science College, Chatrapur



UNDER GUIDANCE OF

**Mr. Pradyumna Madhei
Asst. Professor of Physics
Department of Physics**

DECLARATION

I am BATAKRUSHNA BEHERA hereby declare that the project work entitled "Synthesis & Characterization of Magnesium-Doped Zinc Oxide Nanoparticles and Exploring their applications" submitted to Berhampur University. It is a record of an original work done by me under the guidance of Mr. PRADYUMNA MADHEI, Asst. Professor of Physics, Department of Physics.

This work has not been submitted previously, in part or full, for the award of any degree, diploma, fellowship, or any other similar title or recognition.

Batakrushna Behera
BATAKRUSHNA BEHERA

A PROJECT REPORT ON

"DILEPTONIC DECAY OF B AND B_s MESONS IN A DIRAC FORMALISM"

**Project paper submitted to Berhampur
University towards the fulfilment of
The degree of**

MASTER OF SCIENCE IN PHYSICS

Submitted by

BINAYA RAUTA

ROLL NO-24PHYS0025

REGD.NO-16740/2019

Under the guidance of

Dr. Arati Dikhit

Lecturer in Physics



P.G DEPT OF PHYSICS
GOVT. SCIENCE COLLEGE,
CHATRAPUR, ODISHA

2026

DECLARATION

I, Binaya Rauta, hereby declare that this project entitled "DILEPTONIC DECAY OF BAND B_s MESONS IN A DIRAC FORMALISM," submitted to Berhampur University in partial fulfillment of the requirements for the degree of Master of Science, is of my own and that has not been submitted previously for the award of any degree or diploma to any other institution including Universities or published any time earlier.

Binaya Rauta

Binaya Rauta

Roll No - 24PHYS0025



A PROJECT REPORT

ON

Computational Analysis of ETL-Dependent CsPbI₃ Perovskite Solar Cells for Enhanced Photovoltaic

Submitted to the

Project paper submitted to Berhampur University towards the fulfilment of the degree of

Master in Physics

Submitted by :

G Gayatri Kumari Reddy

24PHYS0026
MSc 2nd Year

Govt. Science College , Chatrapur



Under guidance of

Dr. Arati Dikhit

Lecturer in Physics

Department of Physics

DECLARATION

I am G Gayatri kumara reddy hereby declare that the project work entitled **“Computational Analysis of ETL-Dependent CsPbI₃ Perovskite Solar Cells for Enhanced Photovoltaic Performances”** submitted to Berhampur University. It is a record of an original work done by me under the guidance of **Dr.Arati Dikhit,Lecturer in Physics,Department of Physics.**

This work has not been submitted previously, in part or full, for the award of any degree, diploma, fellowship, or any other similar title or recognition.

G Gayatri Kumari Reddy
G Gayatri kumari Reddy



A PROJECT REPORT

ON

**“ Stability and Performance Evaluation of Lead Free FASnI_3
Pervoskite Solar cell using SCAPS-1D”**

Submitted to the

**Project paper submitted to Berhampur University towards the fulfilment
of the degree of**

Master in Physics

Submitted by :

HRUSHIKESH SAHOO

MSc 2nd Year

ROLL NO:- 24PHYS0027 REGD. NO.:- 21946/2024

Govt. Science College , Chatrapur



Under guidance of

Dr. Arati Dikhit

Assistant Professor
Department of Physics

DECLARATION

I am **Hrushikesh Sahoo** hereby declare that the project work entitled "Stability and Performance Evaluation of Lead Free FASnI_3 Pervoskite Solar cell using SCAPS-ID" submitted to Berhampur University. It is a record of an original work done by me under the guidance of **Dr. Arati Dikhit, Assistant Professor in Physics, Department of Physics.**

This work has not been submitted previously, in part or full, for the award of any degree, diploma, fellowship, or any other similar title or recognition

Hrushikesh Sahoo
Hrushikesh Sahoo



A PROJECT ON
**STRUCTURAL AND OPTICAL
INVESTIGATION OF
LI- AND MG-DOPED
NIO THIN FILMS**



ସରକାରୀ ବିଜ୍ଞାନ ମହାବିଦ୍ୟାଳୟ, ଚତ୍ରପୁର

SUBMITTED TO
BERHAMPUR UNIVERSITY

SUBMITTED BY
Laxmidhar Panigrahi

Roll .no-24PHYS0028

M.SC 2ND YEAR

GOVT SCIENCE COLLEGE, CHATRAPUR

Mr. PRADYUMNA MADHEI

Assistant Professor of Physics

Department of Physics

DECLARATION

I am Laxmidhar Panigrahi hereby declare that the project work entitled "Structural and Optical Investigation of Li- and Mg-Doped NiO Thin Films" submitted to Berhampur University. It is a record of an original work done by me under the guidance of **Mr. Pradyumna Madhei Assistant Professor of Physics, Department of Physics.**

This work has not been submitted previously, in part or full, for the award of any degree, diploma, fellowship, or any other similar title or recognition

Laxmidhar Panigrahi
Laxmidhar Panigrahi



A PROJECT REPORT ON

**“SCAPS-1D Simulation And Performance Optimization
Of Ultra-Thin MASnI_3 Perovskite Solar cells”**

Submitted to the

Project paper submitted to Berhampur University towards the fulfilment
of the degree of

Master in Physics

Submitted by :

Lopinti Anjili

MSc 2nd Year

24PHYS0029

Govt. Science College, Chatrapur



Under guidance of

Dr. Arati Dikhit

Lecturer in Physics

Department of Physics

DECLARATION

I am Lopinti Anjili hereby declare that the project work entitled "SCAPS-1D Simulation And Performance Optimization Of Ultra-Thin MASnI_3 Perovskite Solar cells" submitted to Berhampur University. It is a record of an original work done by me under the guidance of **Dr. Arati Dikhit, Lecturer in Physics, Department of Physics.**

This work has not been submitted previously, in part or full, for the award of any degree, diploma, fellowship, or any other similar title or recognition

Lopinti Anjili
Lopinti Anjili



A PROJECT REPORT ON

**“Analysis of Metallic Layer Effects on SPR Sensor Performance
For Glucose Monitoring”**

Submitted to the

Project paper submitted to Berhampur University towards the fulfilment
of the degree of

Master in Physics

Submitted by :

Rojalini Pradhan

Roll.no.-24PHYS0030

MSc 2nd Year

Govt. Science College , Chatrapur



Under guidance of

Ms.Subhashree Mishra

Lecturer in Physics

Department of Physics

DECLARATION

I am Rojalini Pradhan hereby declare that the project work entitled "Analysis of Metallic Layer Effects on SPR Sensor Performance For Glucose Monitoring" submitted to Berhampur University. It is a record of an original work done by me under the guidance of **Ms.Subhashree Mishra,Lecturer in Physics,Department of Physics.**

This work has not been submitted previously, in part or full, for the award of any degree, diploma, fellowship, or any other similar title or recognition

Rojalini Pradhan
Rojalini Pradhan



A PROJECT REPORT ON

**“Multi-Range Refractive Index Detection Using Surface Plamon
Resonance In Optical Fibers”**

Submitted to the

Project paper submitted to Berhampur University towards the fulfilment
of the degree of

Master in Physics

Submitted by :

Sai Pujarani Nayak

Roll.no.-24PHYS0031

MSc 2nd Year

Govt. Science College , Chatrapur



Under guidance of

Ms.Subhashree Mishra

Lecturer in Physics

Department of Physics

DECLARATION

I am Sai Pujarani Nayak hereby declare that the project work entitled "Multi-Range Refractive Index Detection Using Surface Plasmon Resonance in Optical Fibre" submitted to Berhampur University. It is a record of an original work done by me under the guidance of **Ms. Subhashree Mishra, Lecturer in Physics, Department of Physics.**

This work has not been submitted previously, in part or full, for the award of any degree, diploma, fellowship, or any other similar title or recognition

Sai Pujarani Nayak

Sai Pujarani
Nayak



A PROJECT REPORT ON

“Computational Analysis of Trench Waveguide”

Submitted to the

Project paper submitted to Berhampur University towards the fulfilment
of the degree of

Master in Physics

Submitted by :

Shubhashree Behera

Roll.no.-24PHYS0032

MSc 2nd Year

Govt. Science College , Chatrapur



Under guidance of

Ms.Subhashree Mishra

Lecturer in Physics

Department of Physics

DECLARATION

I am Shubhashree Behera hereby declare that the project work entitled "Computational Analysis of Trench Waveguide" submitted to Berhampur University. It is a record of an original work done by me under the guidance of **Ms. Subhashree Mishra, Lecturer in Physics, Department of Physics.**

This work has not been submitted previously, in part or full, for the award of any degree, diploma, fellowship, or any other similar title or recognition

Shubhashree Behera
Shubhashree Behera



A PROJECT REPORT

ON

“Numerical Simulation and Optimization of CsPbI₂Br Perovskite Solar
Via SCAPS- 1D”

Project paper submitted to Berhampur University towards the fulfilment
of the degree of

Master in Physics

Submitted by :

Swati Nahak

Roll.no.-24PHYS0034

MSc 2nd Year

Govt. Science College , Chatrapur



Under guidance of

Mr.Pradyumna Madhei

Lecturer in Physics

Department of Physics

DECLARATION

I do hereby declare that the work presented in this project entitled as "NUMERICAL SIMULATION AND OPTIMIZATION OF CsPbI_2Br PEROVSKITE SOLAR CELL VIA SCAPS-1D" carried out by Ms. Swati Nahak, Roll No- 24PHYS0034 is an original work done & submitted by me in the partial fulfilment for degree of master of science in physics GOVERNMENT SCIENCE COLLEGE. This is an original work done by me under the guidance and supervision of **MR. PRADYUMNA MADHEI, HOD (DEPARTMENT OF PHYSICS) GOVERNMENT SCIENCE COLLEGE, CHATARPUR, 761020.**

Further, I declare that it has not been submitted or published, so far, partially or fully for the degree of M.Sc. or any other degree of any college or institution.

Date:

Place: Chatarpur.

Swati Nahak
Signature



A PROJECT REPORT ON

**“Numerical investigation of transmittance characteristics in
Ag/Cu based M-I-M plasmonic wave guides”**

Submitted to the

Project paper submitted to Berhampur University towards the fulfilment
of the degree of

Master in Physics

Submitted by :

Taranisen Pradhan

MSc 2nd Year

24PHYS0035

Govt. Science College , Chatrapur



Under guidance of

Ms.Subhashree Mishra

Lecturer in Physics

Department of Physics

DECLARATION

I am Taranisen Pradhan hereby declare that the project work entitled "Numerical investigation of transmittance characteristics in Ag/Cu based M-I-M plasmonic wave guides" submitted to Berhampur University. It is a record of an original work done by me under the guidance of Ms.Subhashree Mishra,Lecturer in Physics,Department of Physics.

This work has not been submitted previously, in part or full, for the award of any degree, diploma, fellowship, or any other similar title or recognition

Taranisen Pradhan

Taranisen Pradhan



BERHAMPUR UNIVERSITY

A Project Report on

“MODELING AND CHARACTERIZATION OF ECO-FRIENDLY MASnI_3 PEROVSKITE SOLAR CELL USING INORGANIC CHARGE TRANSPORT LAYERS”

DEPARTMENT OF PHYSICS



GOVERNMENT SCIENCE COLLEGE, CHATRAPUR

SUBMITTED BY:

Name: Tofan Muli

PG 2nd Year

Roll No: 24PHYS0037

GUIDED BY:

Shri Pradyumna Madhei
HOD, Department of Physics

DECLARATION

I hereby declare that the project work entitled:

“Modeling and Characterization of Eco-Friendly MASnI_3 Perovskite Solar Cell Using Inorganic Charge Transport Layers”

submitted to the Department of Physics, Government Science College Chatrapur, affiliated to Berhampur University, in partial fulfillment of the requirements for the degree of Master of Science (M.Sc.) in Physics, is a record of original work carried out by me under the guidance and supervision of Shri Pradyumna Madhei.

I further declare that this project work has not been submitted previously, either fully or partially, for the award of any degree, diploma, or any other academic qualification in this or any other institution or university.

Tofan Muli
Signature of the Student

Tofan Muli

Roll Number: 24PHYS0037

Department of Physics

Government Science College Chatrapur