

# **FATIMA MATA NATIONAL COLLEGE**

(AUTONOMOUS)



Kollam, Kerala, India

Department of Physics

PROJECT REPORT ON

## **MEASUREMENT OF RADON EXHALATION RATE FROM VARIUOS BUILDING MATERIALS OF SOUTH WEST COAST OF KERALA**

Submitted by

**AGNIESZKA KIMBERLY ROZARIO**

**Reg No.P1712001**

Submitted to Fatima Mata National College (Autonomous) in partial fulfillment of the requirements for the award of degree of Master of Science in Physics during the academic year 2017-2019

**Signature of invigilator:**


# CERTIFICATE

This is to certify that the Project Report titled “**Measurement of Radon Exhalation Rate from various Building Materials of South West Coast of Kerala**” is a bonafide record of the project work carried out by **AGNIESZKA KIMBERLY ROZARIO** (Reg.No.P1712001) of Fatima Mata National College, Kollam in partial fulfillment of the requirements for the award of the degree of **MASTER OF SCIENCE IN PHYSICS**, during the academic year 2017-2019. The project report has been approved as it satisfies the academic requirements in the respect of project work prescribed for the said degree.

Project Guide

Head of the Department

  
Dr. Ben Byju. S

  
Prof. V. Vimala

Guest Lecturer

Associate Professor

Dept. of Physics

Dept. of Physics

Place: Kollam

Date:

Examiners:

1. ....

2. ....

**FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS),  
KOLLAM, KERALA**

**(NACC Reaccredited at A Level)**



**PROJECT REPORT ( 15PPH01)**

**ON**

**SYNTHESIS AND CHARACTERIZATION OF  
ZnO NANOPARTICLES THROUGH VARIATION OF  
CONCENTRATION**

Submitted by

**ANUPAMA IGNATIUS (P1712002)**

Under the guidance of

**Mr. IGNATIUS J.**

In partial fulfillment of the requirements for the award of degree of  
MASTER OF SCIENCE IN PHYSICS during the academic year 2017- 2019.

Department of Physics

Fatima Mata National College (Autonomous), Kollam, Kerala

**FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS),  
KOLLAM, KERALA**

**(NACC Reaccredited at A Level)**

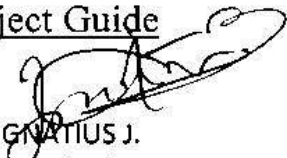


**DEPARTMENT OF PHYSICS**

**CERTIFICATE**

This is to certify that this Project Report entitled **“SYNTHESIS AND CHARACTERIZATION OF ZnO NANOPARTICLES THROUGH VARIATION OF CONCENTRATION”** is an authentic record of the work carried out by **ANUPAMA IGNATIUS (P1712002)** in partial fulfillment of the requirements for the award of **Degree of Master of Science in Physics**, under my supervision and guidance.

Project Guide

  
Mr. IGNATIUS J.  
Assistant Professor  
Department of Physics

Head of the Department

Prof. V.VIMALA  
Associate Professor  
Department of Physics

**Examiners**

- 1.
- 2.

# FATIMA MATHA NATIONAL COLLEGE

(AUTONOMOUS)

NAAC Reaccredited A Grade



Kollam, Kerala, India

Department Of Physics

PROJECT REPORT ON

Submitted by

**ANUPAMA U B**

Reg. No. P1712003

Course Code: 15 PPH01

Submitted to Fatima Mata National College (autonomous) in partial fulfilment of the requirements for the award of degree Master of Science in Physics during the academic year 2017-2019

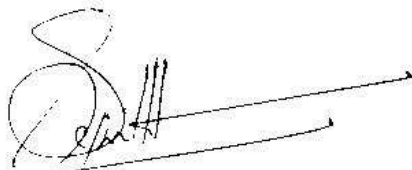
Signature of invigilator

1.....

2.....

# CERTIFICATE

This is to certify that the project entitled " **ESTIMATION OF RADON DOSE RATE USING TWIN CUP DOSIMETER FROM HIGH BACKGROUND RADIATION AREAS OF SOUTHWEST COAST OF KERALA** " is carried out by Anupama U B in the Department of Physics, Fatima Mata National College, Kollam, under my supervision and guidance in the partial fulfilment for the award of the degree of Master of Science in Physics.

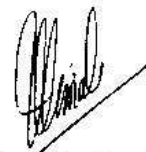


Project Guide

Mr. Sunil A

Assistant Professor

Dept. of Physics



Head of the Department

Ms. V Vimala

Assistant Professor

Dept. of Physics

Date:

Place: Kollam

# **Fatima Mata National College**

(AUTONOMOUS)

**Kollam, Kerala, India**



## **DEPARTMENT OF PHYSICS**

**PROJECT REPORT ON**

# **Study of Radon Exhalation Rate in Soil Samples of South West Coast of Kerala**

**SUBMITTED BY:**

**ARCHANA VISWAMBHARAN**

**(Reg.No.P1712004)**

In partial fulfillment of the requirements for the award of degree of **Master of Science** in **Physics** during the academic year 2017-2019

**Signature of the Invigilator:**

# Fatima Mata National College

(AUTONOMOUS)

Kollam, Kerala, India



## CERTIFICATE

This is to certify that the Project Report titled **Study of Radon Exhalation Rate in Soil Samples of South West Coast of Kerala** is a bonafide record of the project work carried out by ARCHANA VISWAMBHARAN (Reg.No.P1712004) of Fatima Mata National College, Kollam in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE IN PHYSICS, during the academic year 2017-2019. The project report has been approved as it satisfies the academic requirements in the respect of project work prescribed for the said degree.

**Project Guide**

**Head of the Department**

Dr Ben Byju

Ms. Vimala. V

Dep. of Physics

Dep. of Physics

Examiner 1

Examiner 2



**FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS),  
KOLLAM, KERALA**

**(NACC Reaccredited at A Level)**



**PROJECT REPORT**  
**ON**  
**SYNTHESIS AND CHARACTERIZATION OF**  
**ZnO NANOPARTICLES THROUGH THERMAL GROWTH.**

Submitted by

**ARYA T PILLAI (P1712005)**

Under the guidance of

**Mr. IGNATIUS J.**

In partial fulfillment of the requirements for the award of degree of  
MASTER OF SCIENCE IN PHYSICS during the academic year 2017- 2019.

Department of Physics

Fatima Mata National College (Autonomous), Kollam, Kerala

**FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS),  
KOLLAM, KERALA**

**(NACC Reaccredited at A Level)**



**DEPARTMENT OF PHYSICS**

**CERTIFICATE**

This is to certify that this Project Report entitled **“SYNTHESIS AND CHARACTERIZATION OF ZnO NANOPARTICLES THROUGH THERMAL GROWTH ”** is an authentic record of the work carried out by **ARYA T PILLAI (P1712005)** in partial fulfillment of the requirements for the award of **Degree of Master of Science in Physics**, under my supervision and guidance.

Project Guide

Mr. IGNATIUS J.  
Assistant Professor  
Department of Physics

Head of the Department

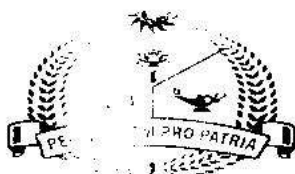
Prof. V.VIMALA  
Associate Professor  
Department of Physics

**Examiners**

- 1.
- 2.

# EXPERIMENTAL VERIFICATION OF ZEEMAN EFFECT AND CALCULATION OF $e/m$ OF AN ELECTRON

(A project report submitted in partial fulfillment of the requirements  
for the award of Final Year MSc Physics)



FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS), KOLLAM

*Submitted by*

BLESSY THOMAS

Candidate Code: P1712006

Under the guidance & supervision of

Mr. IGNATIUS J

## CERTIFICATION

This is to certify that the Project work entitled “**EXPERIMENTAL VERIFICATION OF ZEEMAN EFFECT AND CALCULATION OF  $c/m$  OF AN ELECTRON**” is bonafide record of Project work done by Ms. **BLESSY THOMAS (P1712006)** towards partial fulfillment of the requirements for the award of the M.Sc. PHYSICS (4<sup>th</sup> SEMESTER). She has carried out the Project work under my supervision and guidance.



Mr. IGNATIUS J

Project Guide



Ms. VIMALA V

Head of the Department

External Examiners

1)

2)

3)

# Determination of $e/m$ and Verification of Polarization using Zeeman Effect

(A Project Report Submitted in partial fulfillment of the requirements for the award of Final year MSc PHYSICS)



FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS), KOLLAM

Submitted by

COLLIN B. NETTAR

Under the guidance and supervision of

Mr. IGNATIUS J

## CERTIFICATION

This is to certify that the project work entitled “**Determination of  $e/m$  and Verification of Polarization using Zeeman Effect**” submitted by

Ms. COLLIN B NETTAR (P1712007) towards partial fulfillment of the requirements for the award of the MSc PHYSICS (4<sup>th</sup> Semester) is carried out by

her under my supervision and guidance.



Mr. IGNATIUS J

Project Guide



Ms. VIMALA V

Head of the Department

External Examiners

1)

2)

3)

**A Study On The Biological Effect Of Mobile Phone Radiation**

( A Project Report Submitted in Partial fulfilment Of the requirements for the  
award of final year M.Sc. PHYSICS)



**FATIMA MATA NATIONAL COLLEGE**

( Autonomous)

Submitted by

**DONA LOUIS**

**Candidate code: P1712008**

Under the guidance and supervision of

**Ms.BINDHU SUBIN**

# **BIOSYNTHESIS OF SILVER NANOPARTICLES FROM NATURE'S CHEMICAL FACTORIES**

*(OCIMUM SANCTUM)*

**PROJECT REPORT**

*Submitted to the University of Kerala in partial fulfilment of the  
requirement of the award of degree of*

**MASTER OF SCIENCE**

*In*

**PHYSICS**

*By*

**KEERTHI R.**

*(Reg. No: P1712009)*

*Under the guidance of*

**Dr. SHEENA MARY Y.**

*(Assistant professor in physics)*



**DEPARTMENT OF PHYSICS**

**FATIMA MATA NATIONAL COLLEGE  
(AUTONOMOUS)**



# CERTIFICATE

This is to certify that the project report entitled “BIOSYNTHESIS OF SILVER NANOPARTICLES FROM NATURE’S CHEMICAL FACTORIES” submitted by KEERTHI.R (P1712009) in partial fulfilment for the award of Master Degree of Science in Physics is a bonafide record of the project work by her under my guidance.

Project Guide



Dr. SHEENA MARY Y.

Assistant Professor

Dept. of Physics

Head of the Department



Prof. VIMALA V

Associate Professor

Dept. of Physics

External Invigilator

1.

2.

# **GREEN SYNTHESIS OF SILVER NANOPARTICLES FROM *AZADIRACHTA INDICA* AQUEOUS LEAF EXTRACT**

Project report

*Submitted to FATIMA MATA NATIONAL COLLEGE (Autonomous)  
in the partial fulfillment of the requirements for the award of the  
degree of*

Master Of Science

In

Physics

*Lithiya Kunni (P1712010)*

*Under the guidance of*

*Dr Sheena Mary V*

*Assistant professor*



*Department of physics*

***FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS)***

## *CERTIFICATE*

This is to certify that the project entitled “**Green synthesis of silver nanoparticles from *Azadirachta indica* aqueous leaf extract**” is an authentic record of the project work carried out by **LITHIYA K UNNI ( P1712010)** during the period of her study in the Department of Physics, Fatima Mata National College (Autonomous), Kollam, under my supervision and guidance.



**Dr Sheena Mary Y.**

**Guide**

Assistant Professor

Department of Physics

Fatima Mata National College

Kollam



**Prof. V. Vimala**

**Head of the Department**

Department of Physics

Fatima Mata National College

Kollam

Examiners

1.....

2.....

**FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS),  
KOLLAM, KERALA**

**(NACC Reaccredited at A Level)**



**PROJECT REPORT ( 15PPH01)**  
**ON**  
**A STUDY OF**  
**SYNTHESIS OF ZnO NANOPARTICLES:**  
**METHOD OF REFLUXING**  
**&**  
**VARIATION OF CONCENTRATION**

Submitted by

**MARY LIZY P. (P1712011)**

Under the guidance of

**Mr. IGNATIUS J.**

In partial fulfillment of the requirements for the award of degree of  
**MASTER OF SCIENCE IN PHYSICS** during the academic year 2017- 2019.

Department of Physics

Fatima Mata National College (Autonomous), Kollam, Kerala

**FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS),  
KOLLAM, KERALA**

**(NACC Reaccredited at A Level)**



**DEPARTMENT OF PHYSICS**

**CERTIFICATE**

This is to certify that this Project Report entitled **“A STUDY OF SYNTHESIS OF ZnO NANOPARTICLES: METHOD OF REFLUXING & VARIATION OF CONCENTRATION”** is an authentic record of the work carried out by **MARY LIZY P. (P1712011)** in partial fulfillment of the requirements for the award of **Degree of Master of Science in Physics**, under my supervision and guidance.

Project Guide

Mr. IGNATIUS J.  
Assistant Professor  
Department of Physics

Head of the Department

Prof. V.VIMALA  
Associate Professor  
Department of Physics

Examiners

- 1.
- 2.

FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS), KOLLAM,  
KERALA

(NACC Reaccredited at A Level)



PROJECT REPORT

ON

**SYNTHESIS OF ZnO NANOPARTICLES  
USING THERMAL GROWTH  
AND CHARACTERIZATION USING  
XRD & UV**

Submitted by

NAHAMIYA CHRISTY (P1712012)

Under the guidance of

Mr. IGNATIUS J.

In partial fulfillment of the requirements for the award of degree of MASTER  
OF SCIENCE IN PHYSICS during the academic year 2017-2019.

Department of Physics

Fatima Mata National College (Autonomous), Kollam, Kerala

**FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS),  
KOLLAM, KERALA**

**(NACC Reaccredited at A Level)**



**DEPARTMENT OF PHYSICS**

**CERTIFICATE**

**This is to certify that this Project Report entitled “SYNTHESIS AND CHARACTERIZATION OF ZnO NANOPARTICLES” is an authentic record of the work carried out by NAHAMIYA CHRISTY(P1712012) in partial fulfillment of the requirements for the award of Degree of Master of science in Physics, under my supervision and guidance.**

**Project Guide**

**Mr. IGNATIUS J.  
Assistant Professor  
Department of Physics**

**Head of the Department**

**Prof. V.VIMALA  
Associate Professor  
Department of Physics**

(A project report submitted in partial fulfillment of the requirement for the award of Final Year MSc Physics)



**FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS), KOLLAM**

Submitted by

VINDHYA KRISHNAN V

CANDIDATE CODE: P1712014

COURSE CODE : 15PPH01

Under the guidance & supervision of

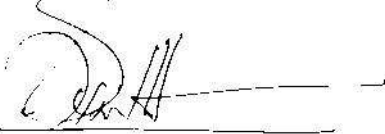
Mr. SUNIL A

JUNE 2019



## CERTIFICATION

This is to certify that the Project work entitled "**ESTIMATION OF ANNUAL EFFECTIVE DOSE OF RADON-THORON AND THEIR PROGENY USING PIN-HOLE BASED DOSIMETER**" is bonafide record of Project work done by Miss.VINDHYA KRISHNAN V (P1712014) towards partial fulfillment of the requirements for the award of the M.Sc. PHYSICS(4th SEMESTER). She has carried out the Project work under my supervision and guidance.



Mr. SUNIL A

Project Guide



Ms. VIMALA V

Head of the Department

External Examiners

1)

2)

3)

# **FATIMA MATA NATIONAL COLLEGE**

(AUTONOMOUS)



Kollam, Kerala, India

Department of Physics

PROJECT REPORT ON

## **MEASUREMENT OF RADON EXHALATION RATE FROM VARIUOS BUILDING MATERIALS OF SOUTH WEST COAST OF KERALA**

Submitted by

**AGNIESZKA KIMBERLY ROZARIO**

**Reg No.P1712001**

Submitted to Fatima Mata National College (Autonomous) in partial fulfillment of the requirements for the award of degree of Master of Science in Physics during the academic year 2017-2019

**Signature of invigilator:**


# CERTIFICATE

This is to certify that the Project Report titled “**Measurement of Radon Exhalation Rate from various Building Materials of South West Coast of Kerala**” is a bonafide record of the project work carried out by **AGNIESZKA KIMBERLY ROZARIO** (Reg.No.P1712001) of Fatima Mata National College, Kollam in partial fulfillment of the requirements for the award of the degree of **MASTER OF SCIENCE IN PHYSICS**, during the academic year 2017-2019. The project report has been approved as it satisfies the academic requirements in the respect of project work prescribed for the said degree.

Project Guide

Head of the Department

  
Dr. Ben Byju. S

  
Prof. V. Vimala

Guest Lecturer

Associate Professor

Dept. of Physics

Dept. of Physics

Place: Kollam

Date:

Examiners:

1. ....

2. ....

**FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS),  
KOLLAM, KERALA**

**(NACC Reaccredited at A Level)**



**PROJECT REPORT ( 15PPH01)**

**ON**

**SYNTHESIS AND CHARACTERIZATION OF  
ZnO NANOPARTICLES THROUGH VARIATION OF  
CONCENTRATION**

Submitted by

**ANUPAMA IGNATIUS (P1712002)**

Under the guidance of

**Mr. IGNATIUS J.**

In partial fulfillment of the requirements for the award of degree of  
MASTER OF SCIENCE IN PHYSICS during the academic year 2017- 2019.

Department of Physics

Fatima Mata National College (Autonomous), Kollam, Kerala

**FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS),  
KOLLAM, KERALA**

**(NACC Reaccredited at A Level)**

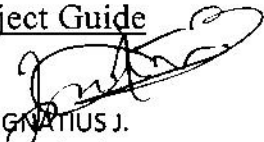


**DEPARTMENT OF PHYSICS**

**CERTIFICATE**

This is to certify that this Project Report entitled **“SYNTHESIS AND CHARACTERIZATION OF ZnO NANOPARTICLES THROUGH VARIATION OF CONCENTRATION”** is an authentic record of the work carried out by **ANUPAMA IGNATIUS (P1712002)** in partial fulfillment of the requirements for the award of **Degree of Master of Science in Physics**, under my supervision and guidance.

Project Guide

  
Mr. IGNATIUS J.  
Assistant Professor  
Department of Physics

Head of the Department

Prof. V.VIMALA  
Associate Professor  
Department of Physics

**Examiners**

- 1.
- 2.

# FATIMA MATHA NATIONAL COLLEGE

(AUTONOMOUS)

NAAC Reaccredited A Grade



Kollam, Kerala, India

Department Of Physics

PROJECT REPORT ON

Submitted by

**ANUPAMA U B**

Reg. No. P1712003

Course Code: 15 PPH01

Submitted to Fatima Mata National College (autonomous) in partial fulfilment of the requirements for the award of degree Master of Science in Physics during the academic year 2017-2019

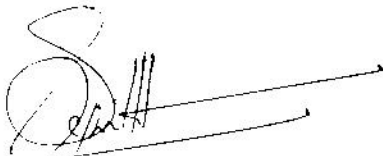
Signature of invigilator

1.....

2.....

# CERTIFICATE

This is to certify that the project entitled " **ESTIMATION OF RADON DOSE RATE USING TWIN CUP DOSIMETER FROM HIGH BACKGROUND RADIATION AREAS OF SOUTHWEST COAST OFKERALA** " is carried out by Anupama U B in the Department of Physics,Fatima Mata National College, Kollam, under my supervision and guidance in the partial fulfilment for the award of the degree of Master of Science in Physics.




Project Guide

Mr. Sunil - A

Assistant Professor

Dept. of Physics



Head of the Department

Ms. V Vimala

Assistant Professor

Dept. of Physics

Date:

Place:Kollam

# **Fatima Mata National College**

(AUTONOMOUS)

**Kollam, Kerala, India**



## **DEPARTMENT OF PHYSICS**

**PROJECT REPORT ON**

# **Study of Radon Exhalation Rate in Soil Samples of South West Coast of Kerala**

**SUBMITTED BY:**

**ARCHANA VISWAMBHARAN**

**(Reg.No.P1712004)**

In partial fulfillment of the requirements for the award of degree of **Master of Science in Physics** during the academic year 2017-2019

**Signature of the Invigilator:**



# Fatima Mata National College

(AUTONOMOUS)

Kollam, Kerala, India



## CERTIFICATE

This is to certify that the Project Report titled **Study of Radon Exhalation Rate in Soil Samples of South West Coast of Kerala** is a bonafide record of the project work carried out by ARCHANA VISWAMBHARAN (Reg.No.P1712004) of Fatima Mata National College, Kollam in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE IN PHYSICS, during the academic year 2017-2019. The project report has been approved as it satisfies the academic requirements in the respect of project work prescribed for the said degree.

**Project Guide**

**Head of the Department**

Dr Ben Byju

Ms. Vimala. V

Dep. of Physics

Dep. of Physics

Examiner 1

Examiner 2

**FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS),  
KOLLAM, KERALA**

**(NACC Reaccredited at A Level)**



**PROJECT REPORT**  
**ON**  
**SYNTHESIS AND CHARACTERIZATION OF**  
**ZnO NANOPARTICLES THROUGH THERMAL GROWTH.**

Submitted by

**ARYA T PILLAI (P1712005)**

Under the guidance of

**Mr. IGNATIUS J.**

In partial fulfillment of the requirements for the award of degree of  
MASTER OF SCIENCE IN PHYSICS during the academic year 2017- 2019.

Department of Physics

Fatima Mata National College (Autonomous), Kollam, Kerala

**FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS),  
KOLLAM, KERALA**

**(NACC Reaccredited at A Level)**



**DEPARTMENT OF PHYSICS**

**CERTIFICATE**

This is to certify that this Project Report entitled **“SYNTHESIS AND CHARACTERIZATION OF ZnO NANOPARTICLES THROUGH THERMAL GROWTH ”** is an authentic record of the work carried out by **ARYA T PILLAI (P1712005)** in partial fulfillment of the requirements for the award of **Degree of Master of Science in Physics**, under my supervision and guidance.

Project Guide

Mr. IGNATIUS J.  
Assistant Professor  
Department of Physics

Head of the Department

Prof. V.VIMALA  
Associate Professor  
Department of Physics

Examiners

- 1.
- 2.

# EXPERIMENTAL VERIFICATION OF ZEEMAN EFFECT AND CALCULATION OF $e/m$ OF AN ELECTRON

(A project report submitted in partial fulfillment of the requirements  
for the award of Final Year MSc Physics)



FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS), KOLLAM

*Submitted by*

BLESSY THOMAS

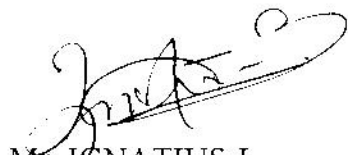
Candidate Code: P1712006

Under the guidance & supervision of

Mr. IGNATIUS J

## CERTIFICATION

This is to certify that the Project work entitled “**EXPERIMENTAL VERIFICATION OF ZEEMAN EFFECT AND CALCULATION OF  $e/m$  OF AN ELECTRON**” is bonafide record of Project work done by **Ms. BLESSY THOMAS (P1712006)** towards partial fulfillment of the requirements for the award of the **M.Sc. PHYSICS (4<sup>th</sup> SEMESTER)**. She has carried out the Project work under my supervision and guidance.



MR. IGNATIUS J

Project Guide



Ms. VIMALA V

Head of the Department

External Examiners

1)

2)

3)

# Determination of $e/m$ and Verification of Polarization using Zeeman Effect

(A Project Report Submitted in partial fulfillment of the requirements for the award of Final year MSc PHYSICS)



FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS), KOLLAM

Submitted by

COLLIN B. NETTAR

Under the guidance and supervision of

Mr. IGNATIUS J

## CERTIFICATION

This isto certify that the project work entitled "**Determination of e/m and Verification of Polarization using Zeeman Effect**" submitted by

Ms. COLLIN B NETTAR (P1712007) towards partial fulfillment of the requirements for the award of theMSc PIHYSICS (4<sup>th</sup>Semester) is carried out by her under my supervision and guidance.



Mr. IGNATIUS J

Project Guide



Ms. VIMALA V

Head of the Department

External Examiners

1)

2)

3)

# **A Study On The Biological Effect Of Mobile Phone Radiation**

( A Project Report Submitted in Partial fulfilment Of the requirements for the  
award of final year M.Sc. PHYSICS)



**FATIMA MATA NATIONAL COLLEGE**

( Autonomous)

Submitted by

**DONA LOUIS**

**Candidate code: P1712008**

Under the guidance and supervision of

**Ms.BINDHU SUBIN**



# **BIOSYNTHESIS OF SILVER NANOPARTICLES FROM NATURE'S CHEMICAL FACTORIES**

*(OCIMUM SANCTUM)*

PROJECT REPORT

*Submitted to the University of Kerala in partial fulfilment of the  
requirement of the award of degree of*

MASTER OF SCIENCE

*In*

PHYSICS

*By*

**KEERTHI R.**

*(Reg. No: P1712009)*

*Under the guidance of*

**Dr. SHEENA MARY Y.**

*(Assistant professor in physics)*



DEPARTMENT OF PHYSICS

FATIMA MATA NATIONAL COLLEGE  
(AUTONOMOUS)

# CERTIFICATE

This is to certify that the project report entitled “BIOSYNTHESIS OF SILVER NANOPARTICLES FROM NATURE’S CHEMICAL FACTORIES” submitted by KEERTHI.R (P1712009) in partial fulfilment for the award of Master Degree of Science in Physics is a bonafide record of the project work by her under my guidance.

Project Guide



Dr. SHEENA MARY Y.

Assistant Professor

Dept. of Physics

Head of the Department



Prof. VIMALA V

Associate Professor

Dept. of Physics

External Invigilator

1.

2.

# **GREEN SYNTHESIS OF SILVER NANOPARTICLES FROM *AZADIRACHTA INDICA* AQUEOUS LEAF EXTRACT**

Project report

*Submitted to FATIMA MATA NATIONAL COLLEGE (Autonomous)  
in the partial fulfillment of the requirements for the award of the  
degree of*

Master Of Science

In

Physics

*Lithiya K unni (P1712010)*

*Under the guidance of*

*Dr Sheena Mary Y*

*Assistant professor*



*Department of physics*

***FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS)***

## *CERTIFICATE*

This is to certify that the project entitled “**Green synthesis of silver nanoparticles from *Azadirachta indica* aqueous leaf extract**” is an authentic record of the project work carried out by **LITHIYA K UNNI ( P1712010)** during the period of her study in the Department of Physics, Fatima Mata National College (Autonomous), Kollam, under my supervision and guidance.



**Dr Sheena Mary Y.**

**Guide**

Assistant Professor

Department of Physics

Fatima Mata National College

Kollam



**Prof. V. Vimala**

**Head of the Department**

Department of Physics

Fatima Mata National College

Kollam

Examiners

1.....

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**FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS),  
KOLLAM, KERALA**  
(NACC Reaccredited at A Level)



**PROJECT REPORT ( 15PPH01)**  
**ON**  
**A STUDY OF**  
**SYNTHESIS OF ZnO NANOPARTICLES:**  
**METHOD OF REFLUXING**  
**&**  
**VARIATION OF CONCENTRATION**

Submitted by

**MARY LIZY P. (P1712011)**

Under the guidance of

**Mr. IGNATIUS J.**

In partial fulfillment of the requirements for the award of degree of  
**MASTER OF SCIENCE IN PHYSICS** during the academic year 2017- 2019.

Department of Physics

Fatima Mata National College (Autonomous), Kollam, Kerala

**FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS),  
KOLLAM, KERALA**

**(NACC Reaccredited at A Level)**



**DEPARTMENT OF PHYSICS**

**CERTIFICATE**

This is to certify that this Project Report entitled “**A STUDY OF SYNTHESIS OF ZnO NANOPARTICLES: METHOD OF REFLUXING & VARIATION OF CONCENTRATION**” is an authentic record of the work carried out by **MARY LIZY P. (P1712011)** in partial fulfillment of the requirements for the award of **Degree of Master of Science in Physics**, under my supervision and guidance.

Project Guide

Mr. IGNATIUS J.  
Assistant Professor  
Department of Physics

Head of the Department

Prof. V.VIMALA  
Associate Professor  
Department of Physics

Examiners

- 1.
- 2.

FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS), KOLLAM,  
KERALA

(NACC Reaccredited at A Level)



PROJECT REPORT

ON

**SYNTHESIS OF ZnO NANOPARTICLES  
USING THERMAL GROWTH  
AND CHARACTERIZATION USING  
XRD & UV**

Submitted by

NAHAMIYA CHRISTY (P1712012)

Under the guidance of

Mr. IGNATIUS J.

In partial fulfillment of the requirements for the award of degree of MASTER  
OF SCIENCE IN PHYSICS during the academic year 2017-2019.

Department of Physics

Fatima Mata National College (Autonomous), Kollam, Kerala

**FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS),  
KOLLAM, KERALA**

**(NACC Reaccredited at A Level)**



**DEPARTMENT OF PHYSICS**

**CERTIFICATE**

**This is to certify that this Project Report entitled “SYNTHESIS AND CHARACTERIZATION OF ZnO NANOPARTICLES” is an authentic record of the work carried out by NAHAMIYA CHRISTY(P1712012) in partial fulfillment of the requirements for the award of Degree of Master of science in Physics, under my supervision and guidance.**

**Project Guide**

**Mr. IGNATIUS J.  
Assistant Professor  
Department of Physics**

**Head of the Department**

**Prof. V.VIMALA  
Associate Professor  
Department of Physics**



(A project report submitted in partial fulfillment of the requirement for the award of Final Year MSc Physics)



**FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS), KOLLAM**

Submitted by

VINDHYA KRISHNAN V

CANDIDATE CODE: P1712014

COURSE CODE : 15PPH01

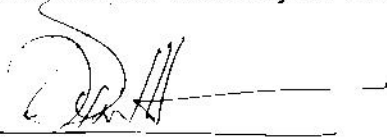
Under the guidance & supervision of

Mr. SUNIL A

JUNE 2019

# CERTIFICATION

This is to certify that the Project work entitled "**ESTIMATION OF ANNUAL EFFECTIVE DOSE OF RADON-THORON AND THEIR PROGENY USING PIN-HOLE BASED DOSIMETER**" is bonafide record of Project work done by Miss.VINDHYA KRISHNAN V (P1712014) towards partial fulfillment of the requirements for the award of the M.Sc. PHYSICS(4th SEMESTER). She has carried out the Project work under my supervision and guidance.



Mr. SUNIL A

Project Guide



Ms. VIMALA V

Head of the Department

External Examiners

1)

2)

3)