



# UNION CHRISTIAN COLLEGE ALUVA-2



SSR 5<sup>th</sup> CYCLE 2023



Criterion 1

## 1.3.2 Student Projects and Internships

# **DEPARTMENT OF CHEMISTRY**



**B.Sc. Chemistry  
Supporting Documents**

**M.Sc. Chemistry  
Supporting Documents**

**UNION CHRISTIAN COLLEGE, ALUVA**  
**DEPARTMENT OF CHEMISTRY**  
(Affiliated to Mahatma Gandhi University- Kottayam)



**CERTIFICATE OF COMPLETION**

This is to certify that the project entitled 'SYNTHESIS AND CHARACTERISATION OF MgO NANOPARTICLES' is submitted by AISWARYA KR(20021026606), AJIN FRANCIS MANAVALAN (200021026607), AKSHAY VINOD(200021026608) in partial fulfilment of the requirements for the award of the Degree in Chemistry under the guidance of Dr. Jenish Paul. The work is carried out as an in-house project by the student.

Dr. Jenish Paul (Project Guide)  
Department of Chemistry

Dr. Simi Pushpan (HoD)  
Department of chemistry

**Dr. SIMI PUSHPAN.K**  
Assistant Professor  
Department of Chemistry  
Union Christian College  
Aluva - 683 102, Kerala

External Examiner:

1. Dr. Jesitha.K *Jesitha.K*  
24/4/23

2. Dr. Ajalesh.B.Nair *Ajalesh.B.Nair*  
24/4/2023

**UNION CHRISTIAN COLLEGE, ALUVA**

**DEPARTMENT OF CHEMISTRY**

(Affiliated to Mahatma Gandhi University- Kottayam)



**CERTIFICATE OF COMPLETION**

This is to certify that the project entitled GREEN SYNTHESIS OF COPPER OXIDE NANOPARTICLES USING AZADIRACTA INDICA (NEEM) LEAF EXTRACT is submitted by Anand Sekhar (Reg No: 200021026609), Anand V B (Reg No: 200021026610), Aparna Benny (Reg No: 200021026611) in partial fulfillment of the requirements for the award of the Degree in Chemistry under the guidance of Ms. Smitha Roy, Assistant Professor, Department of Chemistry, Union Christian College, Aluva. The work is carried out as an in-house project by the student.

Signature of Guide

Signature of Head of the Department

*Dr. Jesitha K*  
24/04/2023

Dr. JESITHA.K

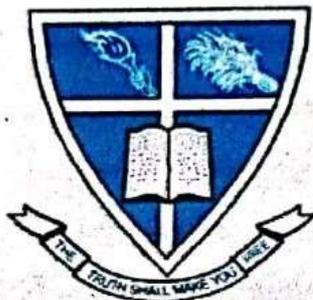
Examiners:

*Dr. Ajalesh B. Nair*  
24/04/2023

Dr. Ajalesh. B. Nair

Dr. SIMI PUSHPAN.K  
Assistant Professor  
Department of Chemistry  
Union Christian College  
Aluva-686102, Kerala

**DEPARTMENT OF CHEMISTRY**  
**UNION CHRISTIAN COLLEGE, ALUVA**  
(Affiliated to Mahatma Gandhi University-Kottayam)



**CERTIFICATE OF COMPLETION**

This is to certify that the project entitled **SYNTHESIS OF CERIUM OXIDE NANOPARTICLES AND ITS APPLICATIONS** is submitted by Aswathy PS(Reg No:200021026612), Athif Muhammed T N(Reg No:200021026613), Clincia K A(Reg No:200021026614) in partial fulfillment of the requirements for the award of Degree of Bachelor of Science in Chemistry under the guidance of Ms. Minu Joys, Assistant Professor, Union Christian College, Aluva. The work is carried as an in-house project by the student.

Signature of Guide

**Ms. MINU JOYS**  
Assistant Professor & Head  
Department of Chemistry  
Union Christian College  
Aluva

Signature of Head of the Department

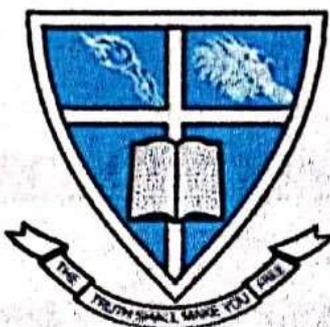
**Dr. SIMI PUSHPAN.K**  
Assistant Professor  
Department of Chemistry  
Union Christian College  
Aluva - 683 102, Kerala

Examiners: **Dr. JESITHA. K** 24/04/2023

**Dr. Ajalesh. B. Nair** 24/04/2023

**UNION CHRISTIAN COLLEGE, ALUVA**  
**DEPARTMENT OF CHEMISTRY**

(Affiliated to Mahatma Gandhi University- Kottayam)



**CERTIFICATE OF COMPLETION**

This is to certify that the project entitled "**GREEN SYNTHESIS OF MESO-MONOFLUORO SUBSTITUTED ARYLDIPYROMETHANE ISOMERS IN AQUEOUS MEDIUM.**" is submitted by **CLINS C (200021026615)**, **DON K J (200021026616)**, **HEMANTH V BABU (200021026617)** in partial fulfilment of the requirements for the award of the Degree in Chemistry under the guidance of **Dr. SIMI PUSHPAN K.** The work is carried out as an in-house project by the student.

Signature of Guide

Signature of HoD

**Dr. SIMI PUSHPAN.K**  
**Assistant Professor**  
**Department of Chemistry**  
**Union Christian College**  
**Aluva - 683 102, Kerala**

**Dr. SIMI PUSHPAN.K**  
**Assistant Professor**  
**Department of Chemistry**  
**Union Christian College**  
**Aluva - 683 102, Kerala**

1. Dr. Jesitha K <sup>gsth.</sup> 24/04/2023

2. Dr. Ajalesh. B. Nair <sup>Ajalesh</sup> 24/04/2023

UNION CHRISTIAN COLLEGE, ALUVA

DEPARTMENT OF CHEMISTRY

(Affiliated to Mahatma Gandhi University- Kottayam)



**CERTIFICATE OF COMPLETION**

This is to certify that the project entitled "*SYNTHESIS AND CHARACTERIZATION OF PORPHYRIN*" is submitted by **Hridya Joshi (200021026618)**, **Husna K (200021026619)** and **Jenssy Liya Ignatious (200021026620)** in partial fulfillment of the requirements for the award of the Degree in Chemistry under the guidance of **Dr. Ajalesh B. Nair**. The work is carried out as an in-house project by the student.

Signature of Guide

Dr. Ajalesh. B. Nair, M.Sc, Ph.D  
Assistant Professor & Research Guide  
Department of Chemistry  
Union Christian College  
Aluva, Pin: 683 102

Signature of HoD

Dr. SIMI PUSHPAN.K  
Assistant Professor  
Department of Chemistry  
Union Christian College  
Aluva - 683 102, Kerala

Dr. JESITHA  24/04/2023

Dr. Ajalesh. B. Nair  24/04/2023

**UNION CHRISTIAN COLLEGE, ALUVA**

**DEPARTMENT OF CHEMISTRY**

(Affiliated to Mahatma Gandhi University- Kottayam)



**CERTIFICATE OF COMPLETION**

This is to certify that the project entitled "**BIOSYNTHESIS AND CHARACTERIZATION OF ZINC OXIDE NANOPARTICLE USING FICUS RELIGIOSA LEAVES EXTRACT**" is submitted by **Jobin Joseph Shaji (200021026621), Kannan P S (200021026622) and Karthik Lal (200021026623)** in partial fulfillment of the requirements for the award of the Degree in Chemistry under the guidance of **Dr. Nelson Joseph P.** The work is carried out as an in-house project by the student.

Signature of Guide

**Dr. NELSON JOSEPH P**  
Assistant Professor  
Department of Chemistry  
Union Christian College  
Aluva-683102

Signature of HoD

Dr. JESITHAK

g, th  
24/4/23

Dr. Ajalsh. B. Nir 24/04/2023

**UNION CHRISTIAN COLLEGE, ALUVA**  
**DEPARTMENT OF CHEMISTRY**

(Affiliated to Mahatma Gandhi University- Kottayam)



**CERTIFICATE OF COMPLETION**

This is to certify that the project entitled **GREEN SYNTHESIS OF ALUMINIUM OXIDE NANOPARTICLES BY USING AERVA LANTA AND JATROPHA CURCURAS SEED EXTRACT** is submitted by **MANSIYA V A, MUHAMMED THAFHEEM K K, MUHAMMED YASSER E A** in partial fulfillment of the requirements for the award of the Degree in **BACHELOR OF SCIENCE** in **CHEMISTRY** under the guidance of **DR. NEETHUMOL VARGHESE**. The work is carried out as an in-house project by the student.

Signature of Guide

*Asha*  
*27/10/23*  
*Asha Pan /*

*Divya*  
*27/10/23*  
*Seem Philip*

Signature of

Head of the department

**Dr. SIMI PUSHPAN.K**  
Assistant Professor  
Department of Chemistry  
Union Christian College  
Aluva - 683 102, Kerala

**UNION CHRISTIAN COLLEGE, ALUVA**  
**DEPARTMENT OF CHEMISTRY**  
(Affiliated to Mahatma Gandhi University- Kottayam)



**CERTIFICATE OF COMPLETION**

This is to certify that the project entitled **MICROWAVE ASSISTED ONE-STEP FACILE SYNTHESIS OF CARBON DOTS** is submitted by **SAMBHU S, SANNIDHI LAKSHMI A R, SONA SIJU** in partial fulfillment of the requirements for the award of the Degree in **BACHELOR OF SCIENCE in CHEMISTRY** under the guidance of **DR. DIVYA SUSAN PHILIPS**. The work is carried out as an in-house project by the student.

Signature of Guide

*Asha*  
27/4/23  
Asha Paul

Dr. Divya Susan Philips

Signature of HoD

**Dr. SIMI PUSHPAN.K**  
Assistant Professor  
Department of Chemistry  
Union Christian College  
Aluva - 683 10

**UNION CHRISTIAN COLLEGE, ALUVA**

**DEPARTMENT OF CHEMISTRY**

(Affiliated to Mahatma Gandhi University- Kottayam)



**CERTIFICATE OF COMPLETION**

This is to certify that the project entitled "**SYNTHESIS AND CHARACTERIZATION OF GOLD NANOPARTICLE DECORATED ALUMINIUM DOPED SILICA**" is submitted by **Sujith Jayan (200021026630)**, **Abhirami Pradeep (200021026631)** and **Abhishek M (200021026632)** in partial fulfillment of the requirements for the award of the Degree in Chemistry under the guidance of **Dr. Sunil Sekhar A.C.** The work is carried out as an in-house project by the students.

Signature

Research Supervisor  
**Dr. SUNIL SEKHAR A C**  
Assistant Professor  
Department of Chemistry  
Union Christian College  
Aluva-683102

27/4/23.  
Asha Paul

27/4/23  
Dr. Divya Susan Philips

Signature

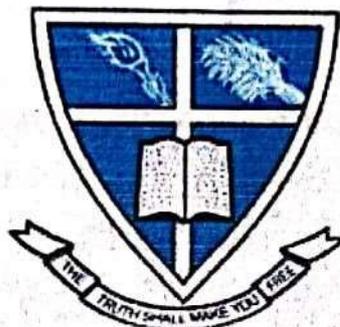
Head of the Department

**Dr. SIMI PUSHPA**  
Assistant Professor  
Department of Chemistry  
Union Christian College  
Aluva - 683102

**UNION CHRISTIAN COLLEGE, ALUVA**

**DEPARTMENT OF CHEMISTRY**

(Affiliated to Mahatma Gandhi University- Kottayam)



**CERTIFICATE OF COMPLETION**

This is to certify that the project entitled ISOLATION OF CHITIN AND ITS ADSORPTION STUDIES (USING DYES WITH VARYING DONOR-ACCEPTOR STRENGTH) is submitted by Adeena A (Reg No: 200021026633), Aisha Mol P.K (Reg No: 200021026634), Alan Kaladharan (Reg No: 200021026636) in partial fulfillment of the requirements for the award of the Degree in Chemistry under the guidance of Ms. Smitha Roy, Assistant Professor, Department of Chemistry, Union Christian College, Aluva. The work is carried out as an in-house project by the student.

Signature of Guide

Signature of Head of the Department

**Dr. SIMI PUSHPAN.K**  
Assistant Professor  
Department of Chemistry  
Union Christian College  
Aluva - 683 102, Kerala

Examiners

1. ~~Asha~~  
27/4/23  
Asha Paul

2. ~~Philip~~

Divya Susan Philip

# UNION CHRISTIAN COLLEGE, ALUVA

## DEPARTMENT OF CHEMISTRY

(Affiliated to Mahatma Gandhi University- Kottayam)



### CERTIFICATE OF COMPLETION

This is to certify that the project entitled "**GREEN SYNTHESIS OF MESO-MONONITRO SUBSTITUTED ARYLDIPYROMETHANE ISOMERS IN AQUEOUS MEDIUM.**" is submitted by **ALKA AN(200021026637)**, **ANEETA VARGHEE(200021026638)**, and **ASWANI PRAKASH (200021026639)** in partial fulfilment of the requirements for the award of the Degree in Chemistry under the guidance of **Dr. SIMI PUSHPAN K.** The work is carried out as an in-house project by the student.

Signature of Guide

*Asha Paul*  
27/9/23

Signature of HoD

**Dr. SIMI PUSHPAN.K**  
Assistant Professor  
Department of Chemistry  
Union Christian College  
Aluva - 683 102, Kerala

*Dr. Divya Susan Philips*  
27/9/23

**Dr. SIMI PUSHPAN.K**  
Assistant Professor  
Department of Chemistry  
Union Christian College  
Aluva - 683 102, Kerala

# UNION CHRISTIAN COLLEGE, ALUVA

## DEPARTMENT OF CHEMISTRY

(Affiliated to Mahatma Gandhi University- Kottayam)



### CERTIFICATE OF COMPLETION

This is to certify that the project entitled *SYNTHESIS AND CHARACTERIZATION OF METALLOPORPHYRIN* is submitted by **ATHIRA P S (200021026641)**, **AYSHA AFREEN (200021026642)** **BAHANAN ALIAS (200021026643)** in partial fulfillment of the requirements for the award of the Degree in B.Sc CHEMISTRY under the guidance of **Dr.Ajalesh B Nair**. The work is carried out as an in-house project by the student.

**Dr.AJALESH B NAIR**

Project Guide

Department of Chemistry

Union Christian College, Aluva

**Ms.MINU JOYS**

Head of Department

Department of Chemistry

Union Christian College, Aluva

External examiners

1. Asha Parvathi

2. Dr. Divya Susan Philip

3/5/23

**UNION CHRISTIAN COLLEGE, ALUVA**  
**DEPARTMENT OF CHEMISTRY**  
(Affiliated to Mahatma Gandhi University, Kottayam)



**CERTIFICATE OF COMPLETION**

This is to certify that the project entitled 'SEPARATION OF TOXIC HEAVY METALS Cr, Ni and Mn USING EGG SHELL POWDER AS A LOW-COST ADSORBENT' is submitted by BASIL BABY (200021026644), DAYA M K (200021026645) and DILJITH A (200021026646) in partial fulfilment of the requirements for the award of the Degree in Chemistry under the guidance of **Dr. NELSON JOSEPH P.** The work is carried out as an in-house project by the student.

**Dr. Nelson Joseph P**  
Project Guide  
Department of Chemistry  
U.C. College, Aluva

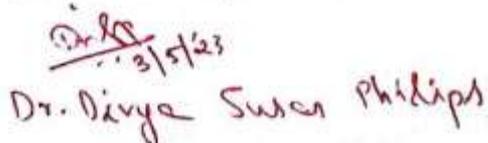
**Ms. Minu Joys**  
Head of the Department  
Department of Chemistry  
U.C. College, Aluva

External Examiners

1.

  
Asha Paul

2.

  
Dr. Divya Susan Phillips



**DEPARTMENT OF CHEMISTRY  
UNION CHRISTIAN COLLEGE, ALUVA  
(AFFILIATED TO MG UNIVERSITY)  
2022-2023**

**CERTIFICATE OF COMPLETION**

This is to certify that the project entitled "GREEN SYNTHESIS OF GRAPHENE QUANTUM DOTS FROM *Azadirachta indica* AND THEIR APPLICATION IN HEAVY METAL DETECTION" is submitted by FEBY JOY (200021026648), GEETHUMOL KG (200021026649), and JOYNA JOHNSON (200021026650) in partial fulfillment of the requirements for the award of the Degree in chemistry under the guidance of Dr. Neethumol Varghese. The work is carried out as an in-house project by the student.

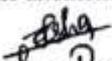
**Dr. Neethumol Varghese**

Project Guide  
Department of Chemistry  
Union Christian College  
Aluva

**Ms. Minu Joys**

Head of the Department  
Department of Chemistry  
Union Christian College  
Aluva

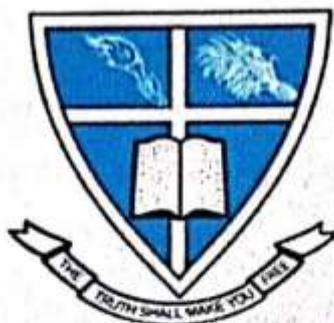
**External Examiners**

1.   
Asha Pam
2.   
Dr. Divya Swan Philips

**UNION CHRISTIAN COLLEGE, ALUVA**

**DEPARTMENT OF CHEMISTRY**

(Affiliated to Mahatma Gandhi University- Kottayam)



**CERTIFICATE OF COMPLETION**

This is to certify that the project entitled "*RICE HUSK DERIVED NANOSILICA-BASED ELECTROCHEMICAL SENSOR FOR DOPAMINE*" is submitted by **KURIAN PAUL (200021026651), MARIYA A. V. (200021026652) and MEKHA JAYARAJ (200021026653)** in partial fulfilment of the requirements for the award of the Degree in Chemistry under the guidance of **Dr. DIVYA SUSAN PHILIPS**. The work is carried out as an in-house project by the student.

Signature of Guide

Dr. Divya Susan Philips

Examiner

1. Asha Paul

2. "3/5/23

Dr. Divya Susan Philips

Signature of HoD

Dr. SIMI PUSHPAN.K  
Assistant Professor  
Department of Chemistry  
Union Christian College  
Aluva - 683 102, Kerala

**UNION CHRISTIAN COLLEGE, ALUVA**

**DEPARTMENT OF CHEMISTRY**

(Affiliated to Mahatma Gandhi University – Kottayam)



**CERTIFICATE OF COMPLETION**

This is to certify that the project entitled **“GOLD NANOPARTICLE  
DECORATED ALUMINIUM DOPED SILICA CATALYST FOR  
REMOVAL OF METHYLENE BLUE DYE MOLECULES”**  
by the students **MOHAMMED ADHIL S M (200021026654), SN  
(200021026656), VARADA K BHATTATHIRIPAD (200021026657)**  
partial fulfillment of the requirements for the award of the Degree in  
under the guidance of **Dr. Sunil Shekhar A C**, Assistant Professor,  
of Chemistry, Union Christian College Aluva. The work is carried out as a  
house project by the student.

  
Project Guide  
Department of Chemistry  
Union Christian College, Aluva

  
Head of Department  
Department of Chemistry  
Union Christian College, Aluva



**UNION CHRISTIAN COLLEGE, ALUVA**  
**DEPARTMENT OF CHEMISTRY**  
(Affiliated to Mahatma Gandhi University, Kottayam)



**CERTIFICATE**

This is to certify that the project entitled **POLYVINYL ALCOHOL/CARBON DOTS (PVA/CDs) NANOCOMPOSITE FILMS WITH IMPROVED MECAHNICAL PROPERTIES** is a bonafide record of the original work done by **ANAGHA SUNNY (210011010763)**, in partial fulfillment of the requirements for the award of the degree of Master of Science in Chemistry from Mahatma Gandhi University, Kottayam under the guidance and supervision of **DR. DIVYA SUSAN PHILIPS**, Assistant Professor, Department of Chemistry, as an in-house project by the student for the academic year 2022-2023.

**Dr. DIVYA SUSAN PHILIPS (Project Guide)**

**Dr. DIVYA SUSAN PHILIPS**

Assistant Professor of  
Department of Chemistry

Union Christian College

Submitted for project evaluation on held on .....

Examiners: 1) **Dr. Jijo V.J.**  
2) **Nousha T.N.**  
3) **Georgina Grace r.w**

21/8/23

21/20/23  
  
21/6/23  
2

**Ms. MINU JOYS (HOD)**

MS. MINU JOYS  
Assistant Professor & Head  
Department of Chemistry  
Union Christian College  
Aluva

# UNION CHRISTIAN COLLEGE, ALUVA

## DEPARTMENT OF CHEMISTRY



### CERTIFICATE

This is to certify that the dissertation entitled "Investigation on the degradation of congo red by cerium oxide nanoparticles and its characterisation" is a bonafide record of the original work done by **Mr. ARJUN SURESH (210011010766)** in partial fulfillment of the requirement of the degree of masters of science in chemistry from Mahathma Gandhi University, Kottayam under the guidance and supervision of **Ms. MINU JOYS**, Assistant professor, Department of Chemistry, as an inhouse project by the student for the academic year 2022-2023.

Ms Minu Joys(HOD) and Project guide

Ms. MINU JOYS  
Assistant Professor & Head  
Department of Chemistry  
Union Christian College  
Aluva

Submitted for project evaluation held on

Examiner: 1) Jijo V. J. *Jijo*  
2) Noorfiya T.N. *Noorfiya*  
3) Georgina Grace T.W. *Georgina Grace*

*21/8/23*  
*21/8/23*  
*21/8/23*

# UNION CHRISTIAN COLLEGE,ALUVA

## DEPARTMENT OF CHEMISTRY



### CERTIFICATE

This is to certify that the dissertation entitled "PHOTODEGRADATION OF INDIGO CARMINE ALONG WITH ITS ANTIBACTERIAL CHARACTERISATIONAL STUDIES" is a bonafide record of the original work done by Ms. GAYATHRY K NAIR(210011010767) in partial fulfillment of the requirement of the degree of masters of science in chemistry from Mahathma Gandhi University,Kottayam under the guidance and supervision of Ms.MINU JOYS,Assistant professor,Department of Chemistry,as an inhouse project by the student for the academic year 2022-2023.

Ms Minu Joys(HOD) and Project guide

Ms. MINU JOYS  
Assistant Professor & Head  
Department of Chemistry  
Union Christian College  
Aluva

Submitted for project evaluation held on

Examiner: 1) Tijo V.J.

21/8/23

2) Noufiya T.N.

21/8/23

3) Georgina Grace T.W

21/8/23

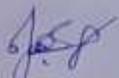
UNION CHRISTIAN COLLEGE, ALUVA  
DEPARTMENT OF CHEMISTRY  
(Affiliated to Mahatma Gandhi University- Kottayam)



CERTIFICATE

This is to certify that the project titled 'GREEN SYNTHESIS OF SILVER NANOPARTICLES USING SNAIL SLIME AND ITS ANTIBACTERIAL ACTIVITY AGAINST *S. aureus*, *Bacillus*, *Klebsiella* and *A. hydrophila* is a bonafide record of the original work done by APARNA S (210011010765), in partial fulfilment for the requirement of the award of the degree of Master of Science in Chemistry from Mahatma Gandhi University, Kottayam under the guidance and supervision of **Dr. JENISH PAUL**, Assistant professor, Department of Chemistry, as an inhouse project by the student for the academic year 2022-2023.

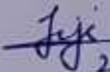
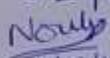
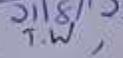
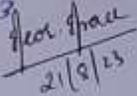
  
Ms. MINI JOYS  
**Ms. MINI JOYS (HOD)**  
Department of Chemistry  
Union Christian College  
Aluva

  
**Dr. JENISH PAUL (Project guide)**

Dr. Jenish Paul  
Research Guide and Assistant Professor  
Department of Chemistry  
Union Christian College, Aluva

Submitted for project evaluation held on

Examiners:-

- 1) Dr. Jijo V. J.  21/8/23
- 2) Nandhya T. N.  21/8/23
- 3) Geomagana Grace  T.W.,  21/8/23

**UNION CHRISTIAN COLLEGE, ALUVA**  
**DEPARTMENT OF CHEMISTRY**

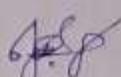
(Affiliated to Mahatma Gandhi University- Kottayam)



**CERTIFICATE**

This is to certify that the project titled 'GREEN SYNTHESIS OF SILVER NANOPARTICLES USING SNAIL SLIME AND ITS ANTIBACTERIAL ACTIVITY AGAINST *E. coli*, *Pseudomonas*, *V. parahaemolyticus* and *S. aureus*' is a bonafide record of the original work done by ANAMIKA P.M. (210011010764), in partial fulfilment for the requirement of the award of the degree of Master of Science in Chemistry from Mahatma Gandhi University, Kottayam under the guidance and supervision of Dr. JENISH PAUL, Assistant professor, Department of chemistry, as an inhouse project by the student for the academic year 2022-23.

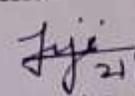
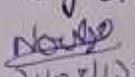
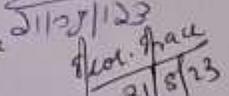
  
Ms. MINU JOYS (HOD)  
Assistant Professor  
Department of Chemistry  
Union Christian College  
Aluva

  
Dr. JENISH PAUL (Project Guide)

Dr. Jenish Paul  
Research Guide and Assistant Professor  
Department of Chemistry  
Union Christian College, Aluva

Submitted for project evaluation held on -----

Examiners: -

- 1) Dr. Jijo V.J.  21/8/23
- 2) Nouriyah T.N.  21/8/23
- 3) Georgina Grace  21/8/23

# UNION CHRISTIAN COLLEGE, ALUVA

## DEPARTMENT OF CHEMISTRY

(Affiliated to Mahatma Gandhi University- Kottayam)



### CERTIFICATE

This is to certify that the project entitled "*Syntheses of Aryl Dipyrromethane Isomers and trans-A<sub>2</sub>B<sub>2</sub>-meso-Aryl Substituted Porphyrin in Aqueous Medium Utilizing a Green Chemistry Protocol*" is a bonafide record of the original work done by **RINI SIMON (210011010772)**, in partial fulfilment for the requirement of the award of the degree of Master of Science in Chemistry from Mahatma Gandhi University, Kottayam under the guidance and supervision of **Dr. SIMI PUSHPAN K.**, Assistant professor, Department of Chemistry, as an inhouse project by the student for the academic year **2022-2023**.

**Dr. SIMI PUSHPAN K** (Project Guide)

Dr. SIMI PUSHPAN.K  
Assistant Professor  
Department of Chemistry  
Union Christian College  
Aluva - 683 102, Kerala

**Ms. MINU JOYS (HOD)**

Ms. MINU JOYS  
Assistant Professor & Head  
Department of Chemistry  
Union Christian College  
Aluva

Submitted for project evaluation held on 21/8/2023

Examiners:- 1) Dr. Tijo V.J. Tijo 21/8/2023  
2) Noufyah T.N. Noufyah  
3) Georgina Grace T.W. Geor. Grace 21/8/23



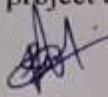
UNION CHRISTIAN COLLEGE, ALUVA

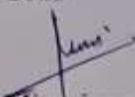
DEPARTMENT OF CHEMISTRY

Affiliated to Mahatma Gandhi University, Kottayam

## CERTIFICATE

This is to certify that the dissertation titled "NICKEL OXIDE INCORPORATED Al-SiO<sub>2</sub> : A ROBUST NANOCATALYST FOR THE HYDROGENATION OF PARA NITROPHENOL" is a record of the original work done by MARY ANAGHA DAS P J (210011010769), in partial fulfilment of the requirements for the award of the degree of Master of Science in Chemistry from Mahatma Gandhi University, Kottayam under the guidance and supervision of Dr. Sunil Sekhar A C, Assistant professor, Department of Chemistry, as an in-house project by the student for the academic year 2022-2023

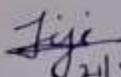
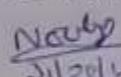
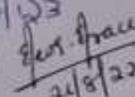
  
Dr. Sunil Sekhar A C (Project Guide)

  
Ms. Minu Joys (HOD)  
Department of Chemistry  
Union Christian College

Ms. MINU JOYS  
Assistant Professor & Head  
Department of Chemistry  
Union Christian College  
Aluva

Submitted for project evaluation held on .....

Examiners:

- 1) Dr. Tijo V.J.  21/8/23
- 2) Noufya T.W.  21/28/23
- 3) Georgina Grace T.W.  24/8/23

# UNION CHRISTIAN COLLEGE, ALUVA

## DEPARTMENT OF CHEMISTRY

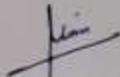
(Affiliated to Mahatma Gandhi University- Kottayam)



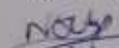
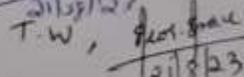
### CERTIFICATE

This is to certify that the project entitled "Polyvinyl Alcohol/ PEG POSS/ Graphene Oxide Hybrid Nanocomposites: Mechanical and Morphological Characterisation" is a bonafide record of the original work done by Nadeema C Jamal (Reg No: 210011010770), in partial fulfilment for the requirement of the award of the degree of Master of Science in Chemistry from Mahatma Gandhi University, Kottayam under the guidance and supervision of Dr. Ajalesh B. Nair, Assistant professor, Department of Chemistry, as an inhouse project by the student for the academic year 2022-2023.

  
Dr. AJALESH B NAIR  
(Project Guide)

  
Ms. MINU JOYS  
(Head of the Department)  
Assistant Professor & Head  
Department of Chemistry  
Union Christian College  
Aluva

Submitted for project evaluation held on \_\_\_\_\_

Examiners: - 1) Dr. Jijo V. J.  21/8/23  
2) Nouriya T.N.  21/8/23  
3) Georgina Grace T.W.  21/8/23

UNION CHRISTIAN COLLEGE, ALUVA

DEPARTMENT OF CHEMISTRY

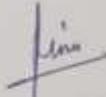
(Affiliated to Mahatma Gandhi University, Kottayam)



CERTIFICATE

This is to certify that the project entitled "ZINC OXIDE NANOPARTICLES FROM POMEGRANATE EXTRACT; GREEN SYNTHESIS, CHARACTERISATION AND ANTIBACTERIAL STUDY" is bonafied record of the original work done by RONY PAILY (210011010773), in partial fulfillment of the requirements for the award of the degree of Master Of Science in Chemistry from Mahatma Gandhi University, Kottayam under the guidance and supervision of DR.NELSON JOSEPH P, Assistant Professor, Department of Chemistry, as an in-house project by the student for the academic year 2022-2023.

  
DR. NELSON JOSEPH P  
Assistant Professor (Subject Guide)  
Department of Chemistry  
Union Christian College

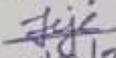
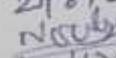
  
Ms. MINI JOYS (HOD)  
Assistant Professor & Head  
Department of Chemistry  
Union Christian College  
Aluva

Submitted for project evaluation held on .....

Examiners ; 1) Dr. Tijo V J

2) Noufya T N

3) Georgina Grace T W

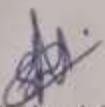
  
21/8/23  
  
21/08/23  
  
21/8/23

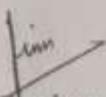


**Union Christian College, Aluva**  
**Affiliated to Mahatma Gandhi University Kottayam**  
**Aluva-683102**

**CERTIFICATE**

This is to certify that the dissertation titled **"ONE POT SYNTHESIS OF NICKEL OXIDE SUPPORTED NANOCATALYST FOR REDUCTION CATALYSIS "** is a record of the original work done by **JOVAN WARSON (210011010768)**, in partial fulfilment of the requirements for the award of the degree of Master of Science in Chemistry from Mahatma Gandhi University, Kottayam under the guidance and supervision of **Dr. Sunil Sekhar A C**, Assistant professor, Department of Chemistry, as an inhouse project by the student for the academic year 2022-2023

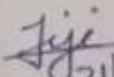
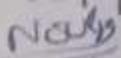
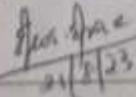
  
Dr. Sunil Sekhar A C (Project Guide)

  
Ms. Minu Joys  
Assistant professor  
Department of Chemistry  
Union Christian College

Submitted for project evaluation held on .....

**Aluva**  
**MS. MINU JOYS**  
Assistant Professor & Head  
Department of Chemistry  
Union Christian College  
Aluva

Examiners:

- 1) **Dr. Jijo V.J.**  21/8/23
- 2) **NAUFISA T.N.**  21/8/23
- 3) **Georgina Grace T.W.**  21/8/23

UNION CHRISTIAN COLLEGE, ALUVA

DEPARTMENT OF CHEMISTRY

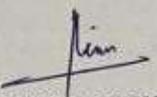
(Affiliated to Mahatma Gandhi University- Kottayam)



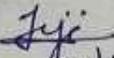
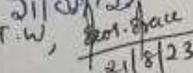
## CERTIFICATE

This is to certify that the project titled 'MICROWAVE ASSISTED SYNTHESIS OF PORTULACA OLERACEA DERIVED QUANTUM DOT AND ITS APPLICATION' is a bonafide record of the original work done by **RAFINA ABDUL KHADER (210011010771)**, in partial fulfillment of the requirement for the award of the degree of Master of Science in Chemistry from Mahatma Gandhi University, Kottayam under the guidance and supervision of **Dr. NEETHUMOL VARGHESE**, Assistant professor, Department of Chemistry, as an inhouse project by the student for the academic year 2022-2023.

  
**Dr. NEETHUMOL VARGHESE**  
Project Guide  
**Dr. NEETHUMOL VARGHESE**  
Assistant Professor  
Department of Chemistry  
Union Christian College  
Aluva 683102

  
**Ms. MINU JOYS**  
**Ms. MINU JOYS**  
Assistant Professor & Head  
Department of Chemistry  
Union Christian College  
Aluva

Submitted for project evaluation on \_\_\_\_\_

Examiners: 1) **Dr. Jijo V.J.**  21/8/23  
2) **NOUFIYA T.N.**  21/8/23  
3) **Georgina Grace T.W.**  21/8/23

**UNION CHRISTIAN COLLEGE, ALUVA**

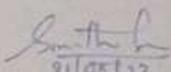
**DEPARTMENT OF CHEMISTRY**

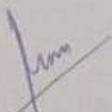
(Affiliated to Mahatma Gandhi University- Kottayam)



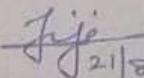
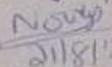
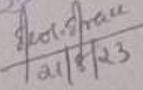
**CERTIFICATE**

This is to certify that the project titled 'INFLUENCE OF IMIDAZOLIUM IONIC LIQUID WITH CARBONACEOUS MATERIAL ON THE THERMAL AND MECHANICAL PROPERTIES OF UNSATURATED POLYESTER RESIN' is a Bonafide record of the original work done by **SUVARNA VARGHESE (210011010774)**, in partial fulfilment for the requirement for the award of the degree of Master of Science in Chemistry from Mahatma Gandhi University, Kottayam under the guidance and supervision of **Ms. SMITHA ROY**, Assistant Professor, Department of Chemistry as an inhouse project by the student for the for the academic year 2022-2023.

  
21/05/23  
**Ms. SMITHA ROY**

  
**Ms. MINI JOYS (HOD)**  
Assistant Professor & Head  
Department of Chemistry  
Union Christian College

Submitted for project evaluation held on -----  
Aluva

Examiners: 1) Dr. Jijo V. J.  21/8/23  
2) Noufya T. N.  21/8/23  
3) Georgina Grace T. W.  21/8/23