



SREE NARAYANA COLLEGE PUNALUR

CRITERION 1 2023-24



STUDENT PROJECTS -PG



सी.एस.आई.आर.-केन्द्रीय औषधि अनुसंधान संस्थान, सधनऊ
 (केन्द्रीय वैज्ञानिक औद्योगिक अनुसंधान परिषद)
 क्षेत्र 10 जनकपुरम एक्सटेंशन बंगला रोड लखनऊ - 226 031 (भारत)
CSIR - Central Drug Research Institute
 (Council of Scientific & Industrial Research)
 Sector 10 Janakpuri Extension Bangla Road Lucknow - 226 031 (India)



CERTIFICATE

This is to certify that the work embodied for the project report "SYNTHESIS OF CANNABINOID GLYCOSIDES FOR THE TREATMENT OF METASTATIC CANCER" submitted by AJINAS. A towards the fulfilment of the course requirement of IV Semester of M.Sc. Chemistry has been carried out under my supervision. He has put in 4 months as prescribed in the ordinance, governing the award of the degree.

Date: 05/07/2024

Place: Lucknow

Dr. Asif Ali

Senior Principal Scientist,
 MPC Division CSIR -CDRI



PRINCIPAL - IN CHARGE
 SREE NARAYANA COLLEGE
 PUNALLUR



**SYNTHESIS OF CANNABINOID GLYCOSIDES FOR THE TREATMENT OF
METASTATIC CANCER**

**DISSERTATION SUBMITTED TO
UNIVERSITY OF KERALA**



**IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTERS OF SCIENCE**

Submitted by

AJINAS A

Candidate code: 63522133005

Under the supervision of

Dr. Asif Ali

Senior Principal Scientist

Medicinal and process chemistry division



CSIR- Central Drug Research Institute

Lucknow – 226031, INDIA

July 2024



Asif
**PRINCIPAL - IN - CHARGE
SREE NARAYANA COLLEGE
PUNALLUR**

Asif
11/7/24



सी.एस.आई.आर.-केन्द्रीय औषधि अनुसंधान संस्थान, सधनऊ
(केन्द्रीय औषधि अनुसंधान संस्थान)
संख्ये 10 जनकपुरम विस्तार, बिरपुर रोड लखनऊ - 226 031 (भारत)
CSIR - Central Drug Research Institute
(Council of Scientific & Industrial Research)
Sector 10 Janakpura Extension, Birapur Road, Lucknow - 226 031 (India)



CERTIFICATE

This is to certify that the work embodied for the project report "SYNTHESIS OF 2-ALKYNYL PHENOL BENZOATES USING SONOGASHIRA COUPLING" submitted by SREERAJ S towards the fulfilment of the course requirement of IV Semester of M.Sc. Chemistry has been carried out under my supervision. He has put in 4 months as prescribed in the ordinance, governing the award of the degree.

Date:

Dr. Valmik Shinde
Senior Scientist

Place:

MPC Division CSIR -CDRI



PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALLUR

SYNTHESIS OF 2-ALKYNYL PHENOL BENZOATES USING
SONOGASHIRA COUPLING

DISSERTATION SUBMITTED TO
UNIVERSITY OF KERALA



IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTERS OF SCIENCE

SUBMITTED BY

SREERAS S

CANDIDATE CODE: 63522133022

UNDER THE SUPERVISION OF

Dr. VALMIK SHINDE

SENIOR SCIENTIST

MEDICINAL AND PROCESS CHEMISTRY DIVISION



PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALLUR

CSIR- CENTRAL DRUG RESEARCH INSTITUTE

LUCKNOW – 226031, INDIA

JULY 2024





सी.एम्.आर्.आर. - केन्द्रीय औषधि अनुसंधान संस्थान, लखनऊ
(भारतीय विज्ञान संस्थानों के अन्तर्गत)
Office 10, Jawahar Education Building, 13A, Sector 10, Lucknow - 226 031 (India)
CSIR - Central Drug Research Institute
(Council of Scientific & Industrial Research)
Sector 10, Jawahar Education Extension, Sector Road, Lucknow - 226 031 (India)



CERTIFICATE

This is to certify that the work embodied for the project report "PHYTOCHEMICAL INVESTIGATION OF INULA RACEMOSA" submitted by ARAVIND R B towards the fulfilment of the course requirement of IV Semester of M.Sc. Chemistry has been carried out under my supervision. He has put in 4 months as prescribed in the ordinance governing the award of the degree.

Date

15/07/2024

Dr. ASIF ALI

Senior Principal Scientist
MPC Division CSIR -CDRI

Place:

LUCKNOW



out
PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALUR

PHYTOCHEMICAL INVESTIGATION OF INULA RACEMOSA

DISSERTATION SUBMITTED TO
UNIVERSITY OF KERALA



IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTERS OF SCIENCE

SUBMITTED BY
ARAVIND R B
CANDIDATE CODE: 63522133008

UNDER THE SUPERVISION OF
Dr. ASIF ALI
SENIOR PRINCIPAL SCIENTIST
MEDICINAL AND PROCESS CHEMISTRY DIVISION



Om P
PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALUR

CSIR-CENTRAL DRUG RESEARCH INSTITUTE

LUCKNOW - 226031, INDIA

JULY 2024



1

National Institute for Interdisciplinary Science and Technology (NIIST)



Council of Scientific & Industrial Research (CSIR)
Ministry of Science and Technology, Government of India
Thiruvananthapuram - 695 019, Kerala, INDIA



Dr. Suraj Soman
Senior Scientist, Centre for Sustainable Energy Technologies (C-SET)

Tel: 91-471-2515436, 8113918534
Email: suraj@niist.res.in, suraj.csir@gmail.com

CERTIFICATE

This is to certify that Ms. Anjali Anand has worked on "Copper (II/I) Redox Electrolyte based Dye-sensitized Solar Cells for Indoor/Outdoor Photovoltaics" under the guidance of Dr. Suraj Soman, Senior Scientist, Centre for Sustainable Energy and Technologies (C-SET) at National Institute for Interdisciplinary Science and Technology CSIR-NIIST, Thiruvananthapuram, in partial fulfillment of the Degree of Master of Science in Chemistry, Sree Narayana College, Punalur, University of Kerala.

Dr. Suraj Soman
26.08.2024

SNP
PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALLUR

डॉ. सुरज सोमन/Dr. SURAJ SOMAN
Senior Scientist
Centre for Sustainable Energy Technologies Division
Council of Scientific and Industrial Research
Ministry of Science and Technology, Government of India
CSIR-NIIST, National Institute for Interdisciplinary
Science and Technology, 695 019, Govt. of India
Thiruvananthapuram, Thiruvananthapuram 695 019



**Copper (II/I) Redox Electrolyte based Dye-sensitized Solar
Cells for Indoor/Outdoor Photovoltaics**

*The dissertation submitted to University of Kerala in partial fulfillment
for the award of the degree of*

Master of Science in Chemistry

Submitted by

ANJALI ANAND

Candidate Code: 63522133007

Department of Chemistry, University of Kerala



Under the guidance of

Dr. Suraj Soman

Senior Scientist



Suraj
**PRINCIPAL - IN CHARGE
SREE NARAYANA COLLEGE
PUNALLUR**

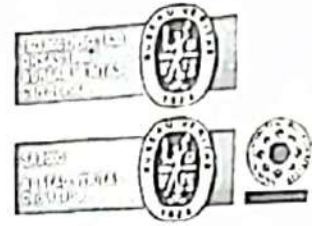
**CSIR-National Institute for Interdisciplinary Science and
Technology (CSIR-NIIST) Thiruvananthapuram, Kerala-695019**

30-06-2024



The Kerala Minerals and Metals Ltd.

(A Govt Of Kerala Undertaking)
(An ISO 9001, ISO 14001, OHSAS 18001 & SA 8000 Certified Company)
SANKARAMANGALAM, CHAVARA-691 583
KOLLAM, KERALA, INDIA.
Phone : +91-476-2651215 to 2651217
Fax : +91-0476-2680101, 2686721
E-mail : contact@kmmml.com, URL : www.kmmml.com



CIN-U14109KL1972SGC002399

TP/PD/T-14/24
07.09.2024

CERTIFICATE

This is to certify that **Ms. Sreelekshmi R (Reg. No.63522133021)**, MSc Chemistry student of The Sree Narayana College, Punalur, Kollam, has undergone a project work entitled "**COMPARATIVE STUDY ON PROPERTIES OF DIFFERENT TITANIUM BEARING ORES (RAW ILMENITE, RUTILE, LEUCOXENE) AND ANALYSIS OF DIFFERENT SIEVE SIZE OF ILMENITE**" under the guidance of **Mr. Sunil V K (Scientific Officer QC Lab)** in the Titanium Dioxide Pigment Unit of the Company at Chavara from **22.03.2024 to 30.04.2024** as a part of his studies.

She was found to be an industrious and motivated person with good conduct and character during the training period.

PUBLIC RELATIONS OFFICER

M. SHABEER P. K.
Public Relations Officer
The Kerala Minerals and Metals Ltd.
(A Govt. of Kerala Undertaking)
Sankaramangalam, Chavara P.O.,
Kollam - 691583



PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALUR

COMPARATIVE STUDY ON PROPERTIES OF
DIFFERENT TITANIUM BEARING ORES (RAW
ILMENITE, RUTILE, LEUCOXENE) AND
ANALYSIS OF DIFFERENT SIEVE SIZE OF
ILMENITE

REPORT OF THE PROJECT WORK DONE BY

NAME: SREELEKSHMI R

REGISTER NUMBER: 63522133021

*Submitted to the UNIVERSITY OF KERALA in
partial fulfilment of the requirement for the Award
of the Master of Science in Chemistry*



Under the guidance of

SUNIL V K

Scientific Officer, QC Lab, KMML

Sree
PRINCIPAL - IN CHARGE
SREE NARAYANA COLLEGE
PUNALLUR

Amn





School of Chemical Sciences
Mahatma Gandhi University
Priyadarsini Hills P. O., Kottayam-686 560
Kerala, India

CERTIFICATE

This is to certify that the HELFA V, 2nd Year M.Sc. student, Sree Narayana College, Punalur (Candidate code - 63522133015) has carried out her M.Sc. project entitled "Synthesis of BiVO₄ and Evaluation of it's Performance as Cathode Material in Aqueous Zinc ion Batteries" under my guidance at the School of Chemical Sciences, Mahatma Gandhi University, Kottayam, Kerala, India from 1st April 2024 to 10th June 2024. The work presented in this report has not been submitted for any other degree or diploma earlier.

Place: Priyadarsini Hills

Date: 10/09/2024



Dr. Ditty Dixon

(Research Supervisor)

Associate Professor

School of Chemical Science

Mahatma Gandhi University

PD Hills, Kottayam

Dr. DITTY DIXON
Associate Professor
School of Chemical Sciences
Mahatma Gandhi University
Kottayam, Kerala, India - 686 560


PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALUR



"SYNTHESIS OF BiVO_4 AND EVALUATION OF ITS PERFORMANCE AS CATHODE MATERIAL IN AQUEOUS ZINC-ION BATTERIES"

Dissertation Submitted to the University of Kerala in partial fulfillment of the degree of

Master of Science in Chemistry

Submitted by

HELFA V

(Candidate code: 63522133015)

To

UNIVERSITY OF KERALA

DEPARTMENT OF CHEMISTRY

THIRUVANANTHAPURAM, KERALA 695034



Under the guidance of

Dr. DITTY DIXON

Associate Professor



Signature
PRINCIPAL - IN CHARGE
SREE NARAYANA COLLEGE
PUNALLUR

SCHOOL OF CHEMICAL SCIENCES,
MAHATMA GANDHI UNIVERSITY, KOTTAYAM





The Kerala Minerals and Metals Ltd.
(A Govt. Of Kerala Undertaking)
(An ISO 9001, ISO 14001, OHSAS 18001 & SA 8000 Certified Company)
SANKARAMANGALAM, CHAVARA-691 583
KOLLAM, KERALA, INDIA.
Phone : +91-476-2651215 to 2651217
Fax : +91-0476-2680101, 2686721
E-mail : contact@kmml.com. URL : www.kmml.com



TP/PD/T-14/24
07.09.2024

CERTIFICATE

This is to certify that Ms. Aswathy S (Reg. No.63522133010), MSc Chemistry student of The Sree Narayana College, Punalur, Kollam, has undergone a project work entitled "THE EFFECTS OF SURFACE COATED SILICA ON DIFFERENT SAMPLES OF RC 822 GRADE TITANIUM DIOXIDE PIGMENT)" under the guidance of Mr. Sunil V K (Scientific Officer QC Lab) in the Titanium Dioxide Pigment Unit of the Company at Chavara from 22.03.2024 to 29.04.2024 as a part of his studies.

She was found to be an industrious and motivated person with good conduct and character during the training period.

PUBLIC RELATIONS OFFICER

MUHAMMED SHARIFF M.K.
Public Relations Officer
The Kerala Minerals and Metals Ltd.
(A Govt. of Kerala Undertaking)
Sankaramangalam, Chavara, P.O., Kollam.



PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALUR

THE EFFECTS OF SURFACE COATED SILICA
ON DIFFERENT SAMPLES OF RC 822 GRADE
TITANIUM DIOXIDE PIGMENT

REPORT OF THE PROJECT WORK DONE BY

NAME: ASWATHY S

REGISTER NUMBER: 63522133010

*Submitted to the UNIVERSITY OF KERALA in
partial fulfilment of the requirement for the Award of
the Master of Science in Chemistry*



Under the guidance of

SUNIL V K

Scientific Officer, QC Lab, KMML



SUNIL V K
**PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALLUR**



श्री चित्रा तिरुनाल आयुर्विज्ञान और प्रौद्योगिकी संस्थान, तिरुवनन्तपुरम- 11, केरल
Sree Chitra Tirunal Institute for Medical Sciences and Technology,
Thiruvananthapuram- 11, Kerala
(भारत सरकार के अधीन राष्ट्रीय महत्व का संस्था)
(An Institution of National Importance under Government of India)
दूरभाष सं./Telephone No. 0471-2443152 फाक्स/Fax 0471-24464332550728
ई-मेल/E-mail : sct@setimst.ac.in वेबसाइट/ Website : www.setimst.ac.in

Dr. Manju s
Scientist E
Division of Dental products
Dept. Biomaterial Science and Technology
Biomedical technology wing
SCTIMST, Trivandrum – 695021
Phone : +914712520341; Mobile: 9539263017
Email : manjus@sctimst.ac.in

CERTIFICATE

This is to certify that the dissertation entitled "Synthesis and Characterization of small molecule plasticizer free Acrylic Denture Softliners & Significance of Nanogel Additives" is an authentic record of the work carried out by Ms. Aiswarya P Surendran, under my supervision in the partial fulfilment of the degree of Master of science in Chemistry and no part of this dissertation has been presented before for any other degree.

Thiruvananthapuram

Date: 21/6/2024



Dr. Manju S.
Guide

21/6/2024

PRINCIPAL, IN CHARGE
SREE NARAYANA COLLEGE
PUNALUR



**SYNTHESIS AND CHARACTERIZATION OF SMALL MOLECULE
PLASTICIZER FREE ACRYLIC DENTURE SOFTLINERS &
SIGNIFICANCE OF NANOGEL ADDITIVES**

**A Dissertation Submitted to the University of Kerala in Partial Fulfilment
of the Requirement for the Degree of**

Master of Science in Chemistry

Submitted By

AISWARYA P SURENDRAN

Candidate Code: 63522133003



**Department of Chemistry
Sri Narayana College, Punalur**

Under the supervision of

Dr. MANJU. S.

Scientist E



**PRINCIPAL - IN - CHARGE,
SREE NARAYANA COLLEGE,
PUNALLUR.**

Division of Dental Products

Dept. Biomaterials Science and Technology

Biomedical Technology Wing

Sree Chitra Tirunal Institute of Medical Sciences and Technology,

Trivandrum, India-695012

June 2024





The Kerala Minerals and Metals Ltd.

(A Govt. Of Kerala Undertaking)
(An ISO 9001, ISO 14001, OHSAS 18001 & SA 8000 Certified Company)

SANKARAMANGALAM, CHAVARA-691 583
KOLLAM, KERALA, INDIA.

Phone : +91-476-2651215 to 2651217
Fax : +91-0476-2680101, 2686721

E-mail : contact@kmml.com, URL : www.kmml.com



TP/PD/T-14/24
07.09.2024

CERTIFICATE

This is to certify that Ms. Vidhya Vinod (Reg.No.63522133024), MSc Chemistry student of The Sree Narayana College, Punalur, Kollam, has undergone a project work entitled "THERMAL AND CATALYTIC EFFECT ON REDUCTION EFFICIENCY OF RAW ILMENITE WITH PETCOKE AND IT'S CRYSTALLOGRAPHIC STUDY" under the guidance of Mr. Sunil V K (Scientific Officer QC Lab) in the Titanium Dioxide Pigment Unit of the Company at Chavara from 22.03.2024 to 30.04.2024 as a part of his studies.

She was found to be an industrious and motivated person with good conduct and character during the training period.

PUBLIC RELATIONS OFFICER

MED SHABEER P. K.
Public Relations Officer

Ltd.
(P)
S.



PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALLUR

**THERMAL AND CATALYTIC EFFECT ON
REDUCTION EFFICIENCY OF RAW ILMENITE
WITH PETCOKE AND IT'S CRYSTALLOGRAPHIC
STUDY**

REPORT OF THE PROJECT WORK DONE BY

NAME: VIDHYA VINOD

REGISTER NUMBER: 63522133024

*Submitted to the UNIVERSITY OF KERALA in
partial fulfilment of the requirement for the Award
of the Master of Science in Chemistry*



Under the guidance of

SUNIL V K

Scientific Officer, QC Lab, KMML



[Signature]
**PRINCIPAL - IN CHARGE
SREE NARAYANA COLLEGE
PUNALLUR**





राष्ट्रीय पृथ्वी विज्ञान अध्ययन केन्द्र
NATIONAL CENTRE FOR EARTH SCIENCE STUDIES
पृथ्वी विज्ञान मंत्रालय, भारत सरकार
Ministry of Earth Sciences, Government of India
पी.बी.नं. 7250, आक्कुलम, तिरुवनन्तपुरम - 695011, भारत
PB No. 7250, Akkulam, Thiruvananthapuram-695011, India



29.08.2024

Dr. K. Anoop Krishnan
Scientist & Supervising Guide
Biogeochemistry Group

CERTIFICATE

This is to certify that Ms. ARYA KRISHNAN S(Reg. No: 63522133009), a bonafide full-time student of Kerala University, successfully has completed her dissertation entitled "HYDROGEOCHEMICAL CHARACTERISTICS OF VAMANAPURAM RIVER BASIN, KERALA, INDIA" in partial fulfillment for the award of Master's Degree in Chemistry (2022-2024), Sree Narayana College, Punalur, Kerala. This is an authentic record of the original research work carried out by her under my supervision and guidance, and no part of this work has been used for any other degree before. The work has been carried out in the Central Chemical Laboratory, Biogeochemistry Group, National Centre for Earth Science Studies, Ministry of Earth Science Studies, Akkulam, Trivandrum, Government of India.

Dr. K. Anoop Krishnan
(Supervising Guide)



PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALLUR

दूरभाष/Phone: +91-471-2511690, 2511692, 2511698, +91-9447402468 (M)
ई-मेल/E-mail: sreeanoop@rediffmail.com, sree.anoop@nccss.gov.in
Committed to Our Earth Our Future

फैक्स/Fax: +91-471-2442289, 471-2511525
वेबसाइट/Website: www.nccss.gov.in
हमारे भविष्य हमारी पृथ्वी के लिए प्रतिबद्ध

HYDROGEOCHEMICAL CHARACTERISTICS OF VAMANAPURAM RIVER BASIN, KERALA, INDIA

The dissertation submitted to the University of Kerala in partial

fulfillment of the Degree

of

MASTER OF SCIENCE IN CHEMISTRY

Submitted by

ARYA KRISHNAN S
(Candidate Code : 63522133009)

To

UNIVERSITY OF KERALA



DEPARTMENT OF CHEMISTRY
THIRUVANANTHAPURAM, KERALA-695034

Under the Guidance of

Dr. K. Anoop Krishnan

National centre for Earth Science Studies (NCESS)

Akkulam, Thiruvananthapuram-605011

[Signature]
PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALUR



भारत सरकार
अंतरिक्ष विभाग
विक्रम साराभाई अंतरिक्ष केन्द्र
तिरुवनन्तपुरम - 695022, भारत
दूरभाष : 0471-2562444 / 2562555
फैक्स : 0471-2705345




Government of India
Department of Space
Vikram Sarabhai Space Centre
Thiruvananthapuram - 695 022, India
Telephone : 0471-2562444 / 2562555
Fax : 0471-2705345


No. AEMS/EMCD/PROJ/24/1

Date: 30/05/2024

CERTIFICATE

This is to certify that the M.Sc. project work entitled "SYNTHESIS AND CHARACTERIZATION OF 5-NITRIMINO TETRAZOLE has been carried out by Kum.Varnika Raj (Reg. No.63522133023, Sree Narayana College, Punalur, Kollam) under the guidance of Dr. Nimesh S. at Energetic Material Characterization Division, Vikram Sarabhai Space Centre, Thiruvananthapuram during the period 5th Feb 2024- 30th May 2024.


Dr. NIMESH S.
Scientist-SE
Engr.-in-charge, AEMS/EMCD


VIKRAM T.
Division Head
EMCD

विक्रम टी/Vikram T
प्रभाग प्रभुवन, ईएमसीडी
Division Head, EMCD
आइएसआरओ/एएमसीडी/ISMG/ASOE
बोएएसएमसी/VSSC




PRINCIPAL - IN CHARGE,
SREE NARAYANA COLLEGE,
PUNALLUR

भारतीय अंतरिक्ष अनुसंधान संगठन Indian Space Research Organisation

**EFFECT OF SILICA-ALUMINA COATING AND
PARTICLE SIZE ON PROPERTIES
OF TITANIUM DIOXIDE PIGMENT**

DONE AT

THE KERALA MINERALS AND METALS LTD (KMML, CHAVARA)

SUBMITTED TO

KERALA UNIVERSITY

In partial fulfilment for the award of degree of MASTER OF SCIENCE IN CHEMISTRY

SUBMITTED BY
SREELEKSHMI

Candidate code : 63522133020

Dissertation code : CH243(a)

Exam code : 63520403

Course code : 635



S. S. S.
PRINCIPAL IN CHARGE,
SREE NARAYANA COLLEGE,
PUNALUR

**POST GRADUATE DEPARTMENT OF CHEMISTRY
SN COLLEGE, PUNALUR (2022-2024)**

1



S. S. S.
11/07/24



राष्ट्रीय पृथ्वी विज्ञान अध्ययन केन्द्र
NATIONAL CENTRE FOR EARTH SCIENCE STUDIES

पृथ्वी विज्ञान मंत्रालय, भारत सरकार
Ministry of Earth Sciences, Govt. of India

पि.बि.नं. ७२५०, आक्कुलम, तिरुवनंतपुरम - ६९५ ०११, भारत
PB.No. 7250, Akkulam, Thiruvananthapuram - 695011, India

20/08/2024

Dr. A. Krishnakumar
Scientist E, Hydrology Group
drakrishnakumar@gmail.com
Krishnakumar.a@ncss.gov.in
Tel: 0471 2511620 (Off.), 9447552880 (Mob.)

CERTIFICATE

This is to certify that the dissertation entitled "GEOCHEMICAL ASSESSMENT OF SOILS IN KARUVANNUR RIVER BASIN, SOUTHERN WESTERN GHATS, INDIA" is based on the project work carried out by Ms. AISWARYA SHAJI, during the academic year 2022-24 at the University of Kerala. The project was carried out at Hydrology Group, National Centre for Earth Science Studies, Ministry of Earth Sciences, Government of India, Thiruvananthapuram under my guidance and supervision during the period 01.4.24 to 31.5.2024. This report is submitted to the University of Kerala in partial fulfillment of the award of Degree of Master Science in Chemistry. No part of this report has been submitted earlier for the award of any other degree.

PRINCIPAL - IN - CHARGE
SREE NARAYANA COLLEGE
PUNJALUR



Dr. A. Krishnakumar

डॉ. ए. कृष्णाकुमार / Dr. A. KRISHNAKUMAR
वैज्ञानिक, जल विज्ञान समूह / Scientist, Hydrology Group
राष्ट्रीय पृथ्वी विज्ञान अध्ययन केन्द्र (एन सी ई एस एस)
National Centre for Earth Science Studies (NCESS)
पृथ्वी विज्ञान मंत्रालय, भारत सरकार
Ministry of Earth Sciences, Govt. of India
आक्कुलम, तिरुवनंतपुरम-६९५ ०११, केरल
Akkulam, Thiruvananthapuram-695 011, Kerala

दूरभाष/Phone: +91- 471 -2511502, 2511500, 2511721
ई-मेल/E-mail : director@ncss.gov.in, seniormanager@ncss.gov.in

फैक्स/Fax : +91 - 471 - 2442280 (Director)

वेबसाइट / Website : www.ncss.gov.in

Committed to Our Earth Our Future

हमारे भविष्य हमारी पृथ्वी के लिए प्रतिबद्ध

SYNTHESIS AND CHARACTERIZATION OF 5-nitriminotetrazole

*This dissertation submitted to the University of Kerala in partial
fulfillment of the requirement for the award of degree of master of
Science in Chemistry*

Submitted by

VARNIKA RAJ

Candidate Code: 63522133023

Dissertation Code:-CH 243

Exam Code: 63520403

Course Code: 635



DEPARTMENT OF CHEMISTRY
SREE NARAYANA COLLEGE

PUNALUR

2022-24



cut
PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALUR



CSIR-NATIONAL INSTITUTE FOR INTERDISCIPLINARY
SCIENCE & TECHNOLOGY (CSIR-NIIST)

Council of Scientific & Industrial Research
Thiruvananthapuram - 695 019



Dr. K G Nishanth
Principal Scientist
Centre for Sustainable Energy Technologies

Email: nishanthkg@niist.res.in
Mob: 9656728857

CERTIFICATE

This is to certify that the dissertation titled "Studies on Biomass-Derived Carbon-Supported Pd Electro-catalyst For Alcohol Oxidation Reaction" is a bonafide record of the research work carried out by Ms A B APARNA (Candidate code: 63522133001) from March 2024 to June 2024 under my supervision at Centre for Sustainable Energy Technologies (C-SET), CSIR NIIST, Thiruvananthapuram for the partial fulfilment of the requirement for the award of the degree of Master of Science in Chemistry at University of Kerala and that no part thereof has been submitted earlier for any degree.

S. N. S.
PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALLUR

Dr. K G NISHANTH

(Project Supervisor)



1

डॉ. निशान्त के जी
Dr. NISHANTH. K. G.
प्रधान वैज्ञानिक / Principal Scientist
सी एस आई नेशनल इंस्टीट्यूट ऑफ इंटरडिसिप्लिनरी साइंस एंड टेक्नोलॉजी (NIIST)
विज्ञान तथा प्रौद्योगिकी विभाग, भारत सरकार
Ministry of Science and Technology, Govt. of India
थिरुवनन्तपुरम / Thiruvananthapuram-695 019.

**GEOCHEMICAL ASSESSMENT OF SOILS IN KARUVANNUR
RIVER BASIN, SOUTH WESTERN GHATS, INDIA**

The dissertation submitted to the university of Kerala in partial

fulfillment of the degree of

MASTERS OF SCIENCE

IN

CHEMISTRY

BY

AISWARYA SHAJI

Candidate Code: 63522133004



SREE NARAYANA COLLEGE, PUNALUR

Under the supervision of

Dr. A. KRISHNAKUMAR

Scientist E

HYDROLOGY GROUP



swk
**PRINCIPAL - IN CHARGE
SREE NARAYANA COLLEGE
PUNALUR**

NATIONAL CENTRE FOR EARTH SCIENCE STUDIES

POST BOX NO-7250, AKKULAM, THIRUVANANTHAPURAM

AUGUST 2024



Handwritten signature



राष्ट्रीय पृथ्वी विज्ञान अध्ययन केन्द्र
 NATIONAL CENTRE FOR EARTH SCIENCE STUDIES
 पृथ्वी विज्ञान मंत्रालय, भारत सरकार
 Ministry of Earth Sciences, Government of India
 पी.टी.प. 7250 अक्कुलम, तिरुवनन्तपुरम - 695011, भारत
 PS No. 7250, Akkulam, Thiruvananthapuram-695011, India



29.08.2024

Dr. K. Anoop Krishnan
 Scientist & Supervising Guide
 Biogeochemistry Group

CERTIFICATE

This is to certify that Ms. Alsumayya.S (Reg. No: 63522133006), a bonafide full-time student of Kerala University, successfully has completed her dissertation entitled **"HYDROBIOGEOCHEMICAL CANDIDATURE OF GROUNDWATER AND SOIL RESOURCES NEARBY RUBBER CULTIVATION: EVALUATION OF QUALITY ASPECTS"** in partial fulfillment for the award of Master's Degree in Chemistry (2022-2024), Sree Narayana College Punalur, Kerala. This is an authentic record of the original research work carried out by her under my supervision and guidance, and no part of this work has been used for any other degree before. The work has been carried out in the Central Chemical Laboratory, Biogeochemistry Group, National Centre for Earth Science Studies, Ministry of Earth Science Studies, Akkulam, Trivandrum, Government of India.

[Signature]

Dr. K. Anoop Krishnan
 (Supervising Guide)



[Signature]
 PRINCIPAL IN CHARGE
 SREE NARAYANA COLLEGE
 PUNALLUR

Phone: +91-471-2511690, 2511692, 2511698; +91-9447402468 (M)
 E-mail: sreeanoop.a@rediffmail.com, sreeanoop@nccss.gov.in
 Committed to Our Earth Our Future

Phone/Fax: +91-471-2442280, 471-2511525
 Website: www.nccss.gov.in

हमारे भविष्य हमारी पृथ्वी के लिए प्रतिबद्ध



**STUDIES ON BIOMASS-DERIVED CARBON-SUPPORTED Pd
ELECTROCATALYST FOR ALCOHOL OXIDATION REACTION**

Dissertation Submitted to the University of Kerala in partial fulfillment of the degree of

Master of Science in Chemistry

Submitted by

A B APARNA

Candidate code: 63522133001



UNIVERSITY OF KERALA

DEPARTMENT OF CHEMISTRY

THIRUVANANTHAPURAM, KERALA 695034

Under the guidance of

Dr. K G NISHANTH

Principal Scientist

Center for Sustainable Energy and Technology

niist

सीएसआईआर का अंतर्विषयी आयाम
Interdisciplinary face of CSIR

CSIR-National Institute for Interdisciplinary Science and Technology (NIIST)

Thiruvananthapuram, Kerala-695019



[Signature]
PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALLUR



NCESS

Dr. A. Krishnakumar
Scientist E, Hydrology Group
drakrishnakumar@gmail.com
Krishnakumar_a@necess.gov.in
Tel: 0471 2511620 (Off.), 9447552880 (Mob.)

राष्ट्रीय पृथ्वी विज्ञान अध्ययन केन्द्र
NATIONAL CENTRE FOR EARTH SCIENCE STUDIES

पृथ्वी विज्ञान मंत्रालय, भारत सरकार
Ministry of Earth Sciences, Govt. of India

पि.बि.नं. ७२५०, आक्कुलम, तिरुवनंतपुरम - ६९५ ०९९, भारत
PB.No. 7250, Akkulam, Thiruvananthapuram - 695011, India


20/08/2024

CERTIFICATE

This is to certify that the dissertation entitled "**GEOCHEMICAL ANALYSIS OF SOILS FROM TAMIRAPARANI RIVER BASIN, TAMILNADU WITH SPECIAL REFERENCE TO HEAVY METAL CONTAMINATION**" is based on the project work carried out by Ms. SANDRA G KRISHNA during the academic year 2022-24 at the University of Kerala. The project was carried out at Hydrology Group, National Centre for Earth Science Studies, Ministry of Earth Sciences, Government of India, Thiruvananthapuram under my guidance and supervision during the period 01.4.24 to 31.5.2024. This report is submitted to the University of Kerala in partial fulfillment of the award of **Degree of Master Science in Chemistry**. No part of this report has been submitted earlier for the award of any other degree.


PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALLUR




Dr. A. Krishnakumar

डॉ. ए. कृष्णाकुमार / Dr. A. KRISHNAKUMAR
वैज्ञानिक, जल विज्ञान समूह / Scientist, Hydrology Group
राष्ट्रीय पृथ्वी विज्ञान अध्ययन केन्द्र (एन सी ई एस एस)
National Centre for Earth Science Studies (NCESS)
पृथ्वी विज्ञान मंत्रालय, भारत सरकार
Ministry of Earth Sciences, Govt. of India
आक्कुलम, तिरुवनंतपुरम-६९५ ०११, केरल
Akkulam, Thiruvananthapuram-695 011, Kerala

दूरभाष/Phone: +91- 471 -2511502, 2511500, 2511721
ई-मेल/E-mail : director@necess.gov.in, seniormanager@necess.gov.in

फैक्स/Fax : +91- 471 - 2442280 (Director)

वेबसाइट / Website : www.necess.gov.in

हमारे भविष्य हमारी पृथ्वी के लिए प्रतिबद्ध

Committed to Our Earth Our Future



**HYDROBIOGEOCHEMICAL CANDIDATURE OF GROUNDWATER
AND SOIL RESOURCES NEARBY RUBBER CULTIVATION:
EVALUATION OF QUALITY ASPECTS**

The dissertation submitted to the University of Kerala in the partial fulfilment of the Degree of

MASTER OF SCIENCE IN CHEMISTRY

ALSUMAYYA. S

Reg No: 63522133006

Batch: 2022-2024



**DEPARTMENT OF CHEMISTRY
SN COLLEGE, PUNALUR
KOLLAM**

Under the guidance of

**Dr. K. ANOOP KRISHNAN
Scientist D**

**Hydrological process Group,
National Centre for Earth Science Studies,
Ministry of Earth Sciences,
Government of India,
Thiruvananthapuram-695011, Kerala**



July 2024

**PRINCIPAL - IN CHARGE
SREE NARAYANA COLLEGE
PUNALUR**



Handwritten signature and date: 11/05/24



राष्ट्रीय पृथ्वी विज्ञान अध्ययन केन्द्र
NATIONAL CENTRE FOR EARTH SCIENCE STUDIES

पृथ्वी विज्ञान मंत्रालय, भारत सरकार
Ministry of Earth Sciences, Govt. of India

वि.वि.नं. ७२५०, आक्कुलम, तिरुवनंतपुरम - ६९५ ०११, भारत
PIL.No. 7250, Akkulam, Thiruvananthapuram - 695011, India

20/08/2024

Dr. A. Krishnakumar
Scientist E, Hydrology Group
drakrishnakumar@gmail.com
Krishnakumar.a@ncess.gov.in
Tel 0471 2511620 (Off.); 9447552880 (Mob.)

CERTIFICATE

This is to certify that the dissertation entitled "ASSESSMENT OF GEOCHEMICAL CHARACTERISTICS OF RIVER SEDIMENTS OF TAMIRAPARANI RIVER BASIN, SOUTHERN WESTERN GHATS, WITH SPECIAL REFERENCE TO POLLUTION". It is based on the project work carried out by Ms. RUBY ALEX, during the academic year 2022-24 at the University of Kerala. The project was carried out at Hydrology Group, National Centre for Earth Science Studies, Ministry of Earth Sciences, Government of India, Thiruvananthapuram under my guidance and supervision during the period 01.04.2024 to 31.5.2024. This report is submitted to the University of Kerala, in partial fulfillment of the award of Degree of Master Science in Chemistry. No part of this report has been submitted earlier for the award of any other degree.



PRINCIPAL + IN CHARGE
SREE NARAYANA COLLEGE
PUNALUR

Dr. A. Krishnakumar

डॉ. ए. कृष्णाकुमार / Dr. A. KRISHNAKUMAR
वैज्ञानिक, जल विज्ञान समूह / Scientist Hydrology Group
राष्ट्रीय पृथ्वी विज्ञान अध्ययन केन्द्र (एन सी ई एस एस)
National Centre for Earth Science Studies (NCESS)
पृथ्वी विज्ञान मंत्रालय, भारत सरकार
Ministry of Earth Sciences, Govt. of India
आक्कुलम, तिरुवनंतपुरम-६९५०११, केरला
Akkulam, Thiruvananthapuram-695011, Kerala

दूरभाष/Phone: +91-471-2511502, 2511500, 2511721
ई-मेल/E-mail: director@ncess.gov.in, seniormanager@ncess.gov.in

फैक्स Fax: +91-471-2442280 (Director)

वेबसाइट / Website: www.ncess.gov.in

हमारे भविष्य हमारी पृथ्वी के लिए प्रतिबद्ध

Committed to Our Earth Our Future

**GEOCHEMICAL ANALYSIS OF SOILS FROM TAMIRAPARANI RIVER
BASIN, TAMILNADU WITH SPECIAL REFERENCE TO HEAVY METAL
CONTAMINATION**

*Dissertation report submitted to University of Kerala in partial fulfilment of the
requirements for the award of the Degree of*

Masters of Science in Chemistry

Submitted by

SANDRA G KRISHINA

Candidate code: 63522133019

Department of Chemistry, University of Kerala



Under the supervision of

Dr. A. KRISHINAKUMAR

Scientist E, Hydrology Group



**NATIONAL CENTRE FOR EARTH SCIENCE STUDIES (NCESS)AKKULAM,
THIRUVANANTHAPURAM- 11**

AUGUST 2024



CSU
**PRINCIPAL - IN CHARGE
SREE NARAYANA COLLEGE
PUNALLUR**



राष्ट्रीय पृथ्वी विज्ञान अध्ययन केन्द्र
NATIONAL CENTRE FOR EARTH SCIENCE STUDIES
पृथ्वी विज्ञान मंत्रालय, भारत सरकार
Ministry of Earth Sciences, Government of India
पी.सी.नं. 7250, आक्कुलम, तिरुवनन्तापुरम - 695011, भारत
PB No. 7250, Akkulam, Thiruvananthapuram-695011, India



29.08.2024

Dr. K. Anoop Krishnan
Scientist & Supervising Guide
Biogeochemistry Group

CERTIFICATE

This is to certify that Ms. Ahila salim (Reg. No: 63522133002), a bonafide full-time student of Kerala University, successfully has completed her dissertation entitled "Investigation of Hydrochemical and biological characteristics of groundwater :Overview of groundwater quality in partial fulfilment for the award of Master's Degree in Chemistry (2022-2024), Sree Narayana College Punalur Kerala. This is an authentic record of the original research work carried out by her under my supervision and guidance, and no part of this work has been used for any other degree before. The work has been carried out in the Central Chemical Laboratory, Biogeochemistry Group, National Centre for Earth Science Studies, Ministry of Earth Science Studies, Akkulam, Trivandrum, Government of India.

Dr. K. Anoop Krishnan
(Supervising Guide)



PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALLUR

Phone: +91-471-2511690, 2511692, 2511698; +91-9447402468 (M)
E-mail: sreeanoop@rediffmail.com, sree.anoop@ncess.gov.in

Phone/Fax: +91-471-2432280, 471-2511525
Website: www.ncess.gov.in

Committed to Our Earth Our Future

हमारे भविष्य हमारी पृथ्वी के लिए प्रतिबद्ध





राष्ट्रीय अंतर्विषयी विज्ञान तथा प्रौद्योगिकी संस्थान
NATIONAL INSTITUTE FOR INTERDISCIPLINARY SCIENCE AND TECHNOLOGY

वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्
इंडस्ट्रियल एस्टेट पी.ओ., पाप्पनकोड, तिरुवनंतपुरम, भारत - 695019

Council of Scientific & Industrial Research
Industrial Estate PO, Pappanamcode, Thiruvananthapuram, India 695019

CERTIFICATE

This is to certify that the dissertation titled "Anodisation of strontium modified and unmodified ADC12 (Al-11Si-0.2Mg) alloy" is a bonafide record of the research work carried out by Ms Aswathy S Ajith (Candidate code: 63522133011) from April 2024 to June 2024 under my supervision at CSIR-NIIST in partial fulfilment of the requirement for the award of degree of Master of Science in Chemistry of University of Kerala and that no part thereof has been submitted earlier for any degree.

Thiruvananthapuram
June 2024

Dr. Sreejakumari S.S
Principal Scientist

CSIR NIIST, Thiruvananthapuram



डॉ. श्रीजाकुमारी. एस. एस

Dr. SREEJAKUMARI, S. S

प्रधान वैज्ञानिक/ Principal Scientist

सी एस आई आर राष्ट्रीय अंतर्विषयी विज्ञान तथा प्रौद्योगिकी संस्थान

CSIR-National Institute for Interdisciplinary

Science and Technology (NIIST), Govt. of India

तिरुवनंतपुरम / Thiruvananthapuram-695 019.

PRINCIPAL - IN CHARGE
SREE NARAYANA COLLEGE
PUNALUR



INVESTIGATION OF HYDROCHEMICAL AND BIOLOGICAL CHARACTERISTICS OF GROUNDWATER: OVERVIEW OF GROUNDWATER QUALITY

The dissertation submitted to the University of Kerala in the partial fulfillment for the Degree of

MASTER OF SCIENCE IN CHEMISTRY

AHILA SALIM

Reg No: 63522133002

Batch: 2022-2024



DEPARTMENT OF CHEMISTRY
S.N COLLEGE, PUNALUR
KOLLAM

Under the guidance of

Dr. K. ANOOP KRISHNAN

Scientist D

Hydrological processes Group,
National Centre for Earth Science Studies,
Ministry of Earth Sciences,
Government of India,
Thiruvananthapuram- 695011, Kerala



JUNE 2024



Handwritten signature and date: 11/05/24.

Handwritten signature and stamp: PRINCIPAL IN CHARGE, SREE NARAYANA COLLEGE, PUNALUR.



राष्ट्रीय पृथ्वी विज्ञान अध्ययन केन्द्र
NATIONAL CENTRE FOR EARTH SCIENCE STUDIES
पृथ्वी विज्ञान मंत्रालय, भारत सरकार
Ministry of Earth Sciences, Government of India
पी.बी.नं. 7250, आक्कुलम, तिरुवनन्तपुरम - 695011, भारत
PB No. 7250, Akkulam, Thiruvananthapuram-695011, India



29.08.2024

Dr. K. Anoop Krishnan
Scientist & Supervising Guide
Biogeochemistry Group

CERTIFICATE

This is to certify that Ms. **BETTY ELSA BABY** (Reg. No: 63522133012), a bonafide full-time student of Kerala University, successfully has completed her dissertation entitled "**PHYSICO-CHEMICAL AND QUALITY ASSESSMENT OF GROUND WATER SAMPLES COLLECTED FROM KALLADA RIVER BASIN**" in partial fulfilment for the award of **Master's Degree in Chemistry (2022-2024)**, Sree Narayana College, Punallur, Kerala. This is an authentic record of the original research work carried out by her under my supervision and guidance, and no part of this work has been used for any other degree before. The work has been carried out in the Central Chemical Laboratory, Biogeochemistry Group, National Centre for Earth Science Studies, Ministry of Earth Science Studies, Akkulam, Trivandrum, Government of India.

Dr. K. Anoop Krishnan
(Supervising Guide)



PRINCIPAL - IN CHARGE
SREE NARAYANA COLLEGE
PUNALLUR

दूरभाष/Phone: +91-471-2511690, 2511692, 2511698; +91-9447402468 (M)
ई-मेल/E-mail: sreeanoop@rediffmail.com, sree.anoop@ncess.gov.in
Committed to Our Earth Our Future

फैक्स/Fax: +91-471-2442280, 471-2511525
वेबसाइट/Website: www.ncess.gov.in

हमारे भविष्य हमारी पृथ्वी के लिए प्रतिबद्ध

ANODISATION OF STRONTIUM MODIFIED AND UNMODIFIED ADC12 (Al-11Si-0.2Mg) ALLOY

Dissertation Submitted to the University of Kerala

In partial fulfilment of the award of the Degree Of

MASTER OF SCIENCE IN CHEMISTRY



Submitted by

ASWATHY S AJITH

Candidate code: 63522133011

PG AND RESEARCH DEPARTMENT OF CHEMISTRY

SREE NARAYANA COLLEGE PUNALUR

Under the supervision of

Dr. SREEJAKUMARI S.S.

(Principal Scientist)



Material Science and Technology Division (MSTD)

CSIR-National Institute for Interdisciplinary Science and Technology (NIIST)

Thiruvananthapuram, Kerala-695019

July 2024



[Signature]
**PRINCIPAL IN CHARGE
SREE NARAYANA COLLEGE
PUNALLUR**

**MODERN ADVANCES IN TRAVANCORE'S IRRIGATION
HISTORY**

DISSERTATION

*Submitted to the University of Kerala
In partial fulfilment of the requirements
for the award of the degree of
Master of Arts in History*

By

AJAYA LAL

Candidate Code: 54222133001

Exam Code: 54220403

Project Code: HYWH 545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This is to certify that the dissertation entitled "MODERN ADVANCES IN TRAVANCORE'S IRRIGATION HISTORY" incorporates the result of original research work carried out by Mr. AJAYA LAL at the Department of History, Sree Narayana College, Punalur, under my supervision and such material as has been obtained from other sources duly acknowledged in this dissertation.



Counter Signed

Mr. Shibu. T

Assistant Professor

Head of the Department

Department of History

Sree Narayana College Punalur



Supervising Signed

Dr. Vishnu S S

Assistant Professor on contract

Department of History

Sree Narayana College Punalur

LIBRARY MOVEMENT IN TRAVANCORE : A LITERARY RENAISSANCE

DISSERTATION

Submitted to the University of Kerala

In partial fulfillment of the requirements

For the award of the degree of

Master of Arts in History

By

ASWIN SATHEESH

Candidate Code: 54222133008

Exam Code: 54220403

Project Code: HYWH 545

DEPARTMENT OF HISTORY



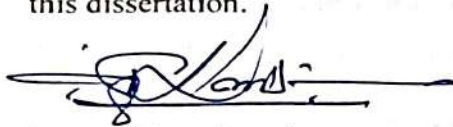
SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This to certify that ' LIBRARY MOVEMENT IN TRAVANCORE : A LITERARY RENAISSANCE' incorporates the result of original research work carried out by Mr. Aswin Satheesh at the Department of History, Sree Narayana College Punalur, under my supervision. Such materials have been obtained from other sources duly acknowledged in this dissertation.



Supervising signed

Mr. Shibu.T

Assistant Professor

Department of History

Sree Narayana College

Punalur



Counter signed

Mr. Shibu.T

Assistant Professor

Department of History

Sree Narayana College

Punalur

JEW'S MIGRATED TO KERALA

DISSERTATION

*Submitted to University of Kerala in partial fulfilment of the
requirements for the award of the degree of
Master of Arts in History*

By

Arya J Nadh

Candidate Code : 54222133006

Exam Code : 54220403

Subject Code : HYWH545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This to certify that "JEWS MIGRATED TO KERALA" incorporates the result of original research work carried out by Arya J Nadh at the Department of History, Sree Narayana College, Punalur. Under my supervision such material as has been obtained from other sources duly acknowledged in this project.



Counter Signed

Dr. Shibu. T

Head of the Department and

Assistant professor

Department of History

Sree Narayana College

Punalur.

**KUTTICHATHAN THEYYAM: A SOCIO CULTURAL
PERSPECTIVE**

DISSERTATION

Submitted to the University of Kerala

In partial fulfilment of the requirements

for the award of the degree of

Master of Arts in History

By

ASHMILA V A

Candidate Code: 54222133007

Exam Code: 54220403

Project Code: HYWH 545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This is to certify that the dissertation entitled "KUTTICHATHAN THEYYAM : A SOCIO CULTURAL PERSPECTIVE" incorporates the result of original research work carried out by Ms. Ashmila V A at the Department of History, Sree Narayana College, Punalur, under my supervision and such material as has been obtained from other sources duly acknowledged in this dissertation.

Supervising Signed



Mr. Shibu. T

Assistant Professor & H O D

Department Of History

Sree Narayana College

Punalur

**EXPLORING THE SACRED SPACES: A STUDY OF JAIN
TEMPLES AND SPIRITUAL CENTERS IN WAYANAD**

DISSERTATION

*Submitted to University of Kerala in partial fulfilment of the
requirements for the award of the degree of
Master of Arts in History*

By

Anjali S

Candidate Code : 54222133002

Exam Code : 54220403

Subject Code : HYWH545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This to certify that "Exploring the Sacred Spaces: A Study of Jain Temples and Spiritual Centers in Wayanad" incorporates the result of original research work carried out by Anjali S at the Department of History, Sree Narayana College, Punalur. Under my supervision such material as has been obtained from other sources duly acknowledged in this project.



Supervising Signed

Dr. Vishnu. S. S


Assistant Professor

(On Contract)

Department of History

Sree Narayana College

Punalur



Counter Signed

Dr. Shibu. T

Head of the Department and

Assistant professor

Department of History

Sree Narayana College

Punalur

**GLORIFYING THE HISTORICITY OF KIZHPERUR DYNASTY
THROUGH INSCRIPTIONS**

DISSERTATION

Submitted to the University of Kerala

In partial fulfilment of the requirements

for the award of the degree of

Master of Arts in History

By

ANNAPOORNESWARI S B

Candidate Code: 54222133003

Exam Code: 54220403

Project Code: HYWH 545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This is to certify that the dissertation entitled "Glorifying the Historicity of Kizhperur Dynasty Through Inscriptions" incorporates the result of original research work carried out by Ms. Annapoorneswari S B at the Department of History, Sree Narayana College, Punalur, under my supervision and such material as has been obtained from other sources duly acknowledged in this dissertation.



Counter Signed

Mr. Shibu.T

Assistant Professor

Head of the Department

Department of History

Sree Narayana College

Punalur



Supervising Signed

Dr. Vishnu

Assistant Professor

(On Contract)

Department of History

Sree Narayana College

Punalur

**THE MAJESTIC HANDLOOM HERITAGE OF
BALARAMAPURAM**

DISSERTATION

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

Master of Arts in History

By

ARATHI V N

Candidate Code: 54222133005

Exam Code: 54220403

Project Code: HYWH545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE PUNALUR

2024

CERTIFICATE

This is to certify that the dissertation entitled "The Majestic Handloom Heritage of Balaramapuram" incorporates the result of original research work carried out by Ms. Arathi V N at the Department of History, Sree Narayana College, Punalur, under my supervision and such material as has been obtained from other sources duly acknowledged in this dissertation.



Counter Signed

Mr. Shibu. T

Assistant Professor

Head of the Department

Department of History

Sree Narayana College Punalur



Supervising Signed

Dr. Vishnu S S

Assistant Professor on contract

Department of History

Sree Narayana College Punalur

**FROM COLONIAL TO CONTEMPORARY: A HISTORICAL
AND CRITICAL ANALYSIS OF MODERN BRITISH
ARCHITECTURE IN THIRUVANANTHAPURAM**

DISSERTATION

Submitted to the University of Kerala

In partial fulfilment of the requirements

for the award of the degree of

Master of Arts in History

By

ANUPAMA G A

Candidate Code: 54222133004

Exam Code: 54220403

Project Code: HYWH 545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This is to certify that the dissertation entitled "FROM COLONIAL TO CONTEMPORARY: A HISTORICAL AND CRITICAL ANALYSIS OF MODERN BRITISH ARCHITECTURE IN THIRUVANANTHAPURAM" incorporates the result of original research work carried out by Ms. ANUPAMA G A at the Department of History, Sree Narayana College, Punalur, under my supervision and such material as has been obtained from other sources duly acknowledged in this dissertation.



Counter Signed

Mr. Shibu. T

Assistant Professor

Head of the Department

Department of History

Sree Narayana College

Punalur



Supervising Signed

Dr. Vishnu. S. S

Assistant Professor

Department of History

Sree Narayana College

Punalur

**R. SANKAR – A SOCIAL AND EDUCATIONAL
REVOLUTIONARY OF MODERN KERALA**

DISSERTATION

Submitted to the University of Kerala

In partial fulfilment of the requirements

for the award of the degree of

Master of Arts in History

By

THUSHAR. R. B

Candidate Code: 54222133023

Exam Code: 54220403

Project Code: HYWH 545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This is to certify that the dissertation entitled "R. Sankar – A Social and Educational Revolutionary of Modern Kerala" incorporates the result of original research work carried out by Mr. Thushar. R. B at the Department of History, Sree Narayana College, Punalur, under my supervision and such material as has been obtained from other sources duly acknowledged in this dissertation.



Counter Signed

Mr. Shibu. T

Assistant Professor

Head of the Department

Department of History

Sree Narayana College

Punalur



Supervising Signed

Dr. Deepthi. P. R

Assistant Professor

Department of History

Sree Narayana College

Punalur

**TRIBALS OF KERALA: A SPECIAL REFERENCE TO
MALAPANDARAMS OF ACHANKOVIL**

DISSERTATION

*Submitted to University of Kerala in partial fulfilment of the
requirements for the award of the degree of
Master of Arts in History*

By

Krishna Priya J L

Candidate Code : 54222133017

Exam Code : 54220403

Subject Code : HYWH545

DEPARTMENT OF HISTORY



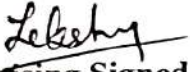
SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This to certify that "Tribals of Kerala: A special reference to Malapandarams of Achankovil" incorporates the result of original research work carried out by Ms. Krishna Priya J Lat the Department of History, Sree Narayana College, Punalur. Under my supervision such material as has been obtained from other sources duly acknowledged in this project.



Supervising Signed

Ms. Lekshmy T. L

Assistant Professor

(On Contract)

Department of History

Sree Narayana College

Punalur



Counter Signed

Dr. Shibu. T

Head of the Department and

Assistant professor

Department of History

Sree Narayana College

Punalur

**‘THE MAKING OF A MARXIST’ : E.M.S. NAMBOODIRIPAD
JOURNEY FROM YOGAKSHEMA SABHA TO KERALA
LEGISLATURE**

DISSERTATION

*Submitted to the University of Kerala In partial fulfilment of the requirements
for the award of the degree of*

Master of Arts in History

By

JEENAMOL. S

Candidate Code : 54222133014
Exam Code : 54220403
Subject Code : HYWH 545

DEPARTMENT OF HISTORY



**SREE NARAYANA COLLEGE
PUNALUR**

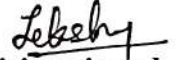
2024

CERTIFICATE

This is to certify that 'The Making of a Marxist' : E.M.S.Namboodiripad Journey From Yogakshema Sabha To Kerala Legislature incorporates the result of original research work carried out by Ms. Jeeamol .S at the Department of History, Sree Narayana College, Punalur under my supervision and such material as has been obtained from other sources duly acknowledged in this dissertation.



Counter signed
Dr. Shibu. T
Head of Department
Assistant Professor
Department of History
Sree Narayana College
Punalur



Supervising signed
Ms. Lekshmy T. L
Assistant Professor
(On contract)
Department of History
Sree Narayana college
Punalur

**THE DALIT UPLIFTMENT: LEGACY OF
P.K CHATHAN MASTER**

DISSERTATION

*Submitted to University of Kerala
in partial fulfilment of the Requirements
for the award of the degree of
Master of Arts in History*

By

MEENU KRISHNAN. B

Candidate Code : 54222133018

Exam Code : 54220403

Subject Code : HYWH545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This to certify that "The Dalit Upliftment: Legacy of P.K Chathan Master" incorporates the result of original research work carried out by Ms. Meenu Krishnan.B at the Department of History, Sree Narayana College, Punalur. Under my supervision such material as has been obtained from other sources duly acknowledged in this project.



Counter signed

Dr. Shibu. T

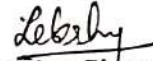
Head of Department

Assistant professor

Department of History

Sree Narayana College

Punalur



Supervising Signed

Ms. Lekshmy T.L

Assistant professor

(on contract)

Department of History

Sree Narayana College

Punalur

HISTORY AND DEVELOPMENT OF EDUCATION IN TRAVANCORE

DISSERTATION

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

Master of Arts in History

By

Harishma H. A

Candidate Code : 54222133012

Exam Code : 54220403

Subject Code : HYWH545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This to certify that "HISTORY AND DEVELOPMENT OF EDUCATION IN TRAVANCORE" incorporates the result of original research work carried out by Harishma H. A at the Department of History, Sree Narayana College, Punalur. Under my supervision such material as has been obtained from other sources duly acknowledged in this project.



Supervising Signed

Dr. Shifna. A

Assistant Professor

(On Contract)

Department of History

Sree Narayana College

Punalur



Counter Signed

Dr. Shibu. T

Head of the Department and

Assistant professor

Department of History

Sree Narayana College

Punalur

**ST. THOMAS TRADITION AND DEVELOPMENT OF TRADE
IN QUILON**

DISSERTATION

Submitted to the University of Kerala

In partial fulfilment of the requirements for

the award of the degree of

Master of Arts in History

By

BUSHRA. N S

Candidate Code: 54222133010

Exam Code: 54220403

Project Code: HYWH 545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This is to certify that the dissertation entitled "**St. Thomas Tradition and Development of Trade in Quilon**" incorporates the result of original research work carried out by **Ms. Bushra N S** at the Department of History, Sree Narayana College, Punalur, under my supervision and such material as has been obtained from other sources duly acknowledged in this dissertation.



Counter Signed

Mr. Shibu. T
Assistant Professor
Head of the Department
Department of History
Sree Narayana College
Punalur



Supervising Signed

Dr. Shifna . A
Assistant Professor
Department of History
Sree Narayana College
Punalur

**CHRISTIAN MISSIONARIES AND EDUCATIONAL
DEVELOPMENT OF SOUTHERN KERALA**

DISSERTATION

*Submitted to University of Kerala
in partial fulfilment of the Requirements
for the award of the degree of
Master of Arts in History*

By

BEAULA JOSE

Candidate Code : 54222133009

Exam Code : 54220403

Subject Code : HYWH545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This to certify tha,“ **Christian Missionaries And Educational Development Of Southern Kerala**” incorporates the result of original research work carried out by **Ms. Beaula Jose** at the Department of History, Sree Narayana College, Punalur. Under my supervision such material as has been obtained from other sources duly acknowledged in this project.

Counter signed



Dr. Shibu. T
Head of Department
Assistant professor
Department of History
Sree Narayana College
Punalur



Supervising Signed

Dr. Shibu. T
Head of Department
Assistant Professor
Department of History
Sree Narayana College
Punalur

KALARIPAYATTU: THE MOTHER OF MARTIAL ARTS

DISSERTATION

*Submitted to University of Kerala in partial fulfilment of the
Requirements for the award of the degree of
Master of Arts in History*

By

JISHA SHAJI

Candidate Code : 54222133015

Exam Code : 54220403

Subject Code : HYWH545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024


CERTIFICATE

This to certify that "KALARIPAYATTU: THE MOTHER OF MARTIAL ARTS" incorporates the result of original research work carried out by Ms. JISHA SHAJI Bat the Department of History, Sree Narayana College, Punalur. Under my supervision such material as has been obtained from other sources duly acknowledged in this project.



Counter signed

Dr. SHIBU. T
Head of the Department
and Assistant professor
Department of History
Sree Narayana College
Punalur



Supervising signed

Ms. Lekshmi T.L.
Asst. Professor (on contract)
Dept. of History
Sree Narayana College
Punalur

**CONTRIBUTION OF TRAVANCORE TO CARNATIC
MUSIC WITH SPECIAL REFERENCE TO MAHARAJA
SWATHI THIRUNAL**

DISSERTATION

*Submitted to the University of Kerala in partial fulfilment of the
Requirements for the award of the Degree of
Master of Arts in History*

By

SHEMEENA . S

Candidate Code : 54222133022

Exam Code : 54220403

Project Code : HYWH 545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This is to certify that dissertation 'CONTRIBUTION OF TRAVANCORE TO CARNATIC MUSIC WITH SPECIAL REFERENCE TO MAHARAJA SWATHI THIRUNAL' incorporates the result of original research work carried out by Ms.Shameena . S at the Department of History, Sree Narayana College, Punalur. Under my supervision such material as has been obtained from other sources duly acknowledged in this dissertation.


Supervising Signed

Dr. Deepthi . P R

Assistant Professor

Department of History

Sree Narayana College

Punalur


Counter Signed

Mr. Shibu . T

Department

Assistant Professor

Department of History

Sree Narayana College

Punalur

**THE VERSATILE WONDER OF COIR ; A SPECIAL REFERENCE
OF PERUMKUZHI AND ANATHALAVATTOM COIR CO-
OPERATIVE SOCIETIES**

DISSERTATION

Submitted to the University of Kerala

In partial fulfilment of the requirements

for the award of the degree of

Master of Arts in History

By

INSIJA BEEGUM

Candidate Code: 54222133013

Exam Code: 54220403

Project Code: HYWH 545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This is to certify that the dissertation entitled "The Versatile Wonder of Coir; A Special Reference of Perumkuzhi and Anathalavattom Coir Co-operative Societies." incorporates the result of original research work carried out by Ms.INSIJA BEEGUM at the Department of History, Sree Narayana College, Punalur, under my supervision and such material as has been obtained from other sources duly acknowledged in this dissertation.



Counter Signed

Mr. Shibu. T

Assistant Professor

Head of the Department

Department of History

Sree Narayana College

Punalur



Supervising Signed

Dr. Shifna. A

Assistant Professor

(On Contract)

Department of History

Sree Narayana College

Punalur

**THE IMPACT OF CASTE SYSTEM AND SOCIAL REFORMS
UPON WOMEN IN KERALA SOCIETY**

DISSERTATION

Submitted to the University of Kerala

In partial fulfilment of the requirements

for the award of the degree of

Master of Arts in History

By

VARSHAMOL SHIBU

Candidate Code: 54222133024

Exam Code: 54220403

Project Code: HYWH 545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This is to certify that the dissertation entitled "The Impact of Caste System and Social Reforms upon Women in Kerala Society" incorporates the result of original research work carried out by Ms. Varshamol Shibu at the Department of History, Sree Narayana College, Punalur, under my supervision and such material as has been obtained from other sources duly acknowledged in this dissertation.



Counter Signed

Mr. Shibu. T


Assistant Professor

Head of the Department

Department of History

Sree Narayana College

Punalur



Supervising Signed

Dr. Deepthi. P. R

Assistant Professor

Department of History

Sree Narayana College

Punalur

The Remnants of Jainism and Chitharal Jain Temple

DISSERTATION

*Submitted to University of Kerala in partial fulfilment of the
requirements for the award of the degree of
Master of Arts in History*

By

Parvathy R Uday

Candidate Code : 54222133020

Exam Code : 54220403

Subject Code : HYWH545

DEPARTMENT OF HISTORY



**SREE NARAYANA COLLEGE
PUNALUR**

2024

CERTIFICATE

This is to certify that the dissertation entitled “The Remnants of Jainism and the Chitharal Temple” incorporates the result of original research work carried out by Ms. Parvathy R Uday at the Department of History, Sree Narayana College, Punalur, under my supervision and such material as has been obtained from other sources duly acknowledged in this dissertation.



Supervising Signed

Dr. Shifna. A

Assistant Professor

(On contract)

Department of History

Sree Narayana College

Punalur



Counter Signed

Mr. Shibu. T

Assistant Professor

Head of the Department

Department of History

Sree Narayana College

Punalur

**PAINTING IN TRAVANCORE SPECIAL
REFERENCE WITH RAJA RAVI VARMA**

DISSERTATION

Submitted to the University of Kerala

In partial fulfillment of the requirements

For the award of the degree of

Master of Arts in History

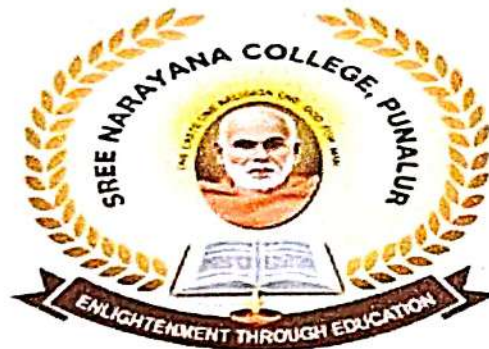
By

NAYANA.R

Candidate Code: 54222133019

Exam Code: 54220403

Project Code: HYWH 545



**DEPARTMENT OF HISTORY
SREE NARAYANA COLLEGE**

PUNALUR

2024

CERTIFICATE

This to certify that 'PAINTING IN TRAVANCORE SPECIAL REFERENCE WITH RAJA RAVI VARMA' incorporate the result of original research work carried out by Ms. NAYANA.R at the Department of History, Sree Narayana College Punalur. Under my supervision such material as has been obtained from other sources duly acknowledged in this project.

Supervising signed 

Dr. Deepthi. P.R

Assistant Professor

Department of History

Sree Narayana College

Punalur

Counter signed 

Mr. Shibu.T

Assistant Professor

Department of History

Sree Narayana College

Punalur

**PADMANABHASWAMY TEMPLE AND ITS
CONNECTION WITH TRAVANCORE ROYAL FAMILY: A
STUDY**

DISSERTATION

*Submitted to the University of Kerala In partial fulfilment of the requirements
For the award of the degree of Master of Arts in History*

By

Devika S

Canidate Code No. : 54222133011

Department Of History



Exam code:54220403

Project code: HYWH 545

**UNIVERSITY OF KERALA
THIRUVANANTHAPURAM**

2024

CERTIFICATE

This to certify that "PADMANABHASWAMY TEMPLE AND ITS CONNECTION WITH TRAVANCORE ROYAL FAMILY: A STUDY" incorporates the result of original research work carried out by Ms. Devika S at the Department of History, Sree Narayana College, Punalur. Under my supervision such material as has been obtained from other sources duly acknowledged in this Dissertation.



Supervising signed
Dr. Shifna.A
Assistant Professor
(on contract)
Department of History
Sree Narayana College
Punalur



Counter signed
Mr. Shibu . T
Head of the Department
Assistant Professor
Department of History
Sree Naryana college
Punalur

CULTURAL HERITAGE OF KOYIKKAL PALACE

DISSERTATION

*Submitted to University of Kerala in partial fulfilment of the
requirements for the award of the degree of
Master of Arts in History*

By
Vipin C Nair

Candidate Code : 54222133025

Exam Code : 54220403

Subject Code : HYWH545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This to certify that "CULTURAL HERITAGE OF KOYIKKAL PALACE" incorporates the result of original research work carried out by Vipin C Nair at the Department of History, Sree Narayana College, Punalur. Under my supervision such material as has been obtained from other sources duly acknowledged in this project.


Supervising Signed


Dr. Deepthi P. R

Assistant Professor

Department of History

Sree Narayana College

Punalur


Counter Signed

Dr. Shibu. T

Head of the Department and

Assistant professor

Department of History

Sree Narayana College

Punalur

HISTORICAL SIGNIFICANCE OF THE FORTS OF KERALA

DISSERTATION

Submitted to the university of Kerala

In partial fulfillment of the requirement

For the award of the degree of

Master of Arts in History

By

KARTHIKA. R

Candidate code : 54222133016

Exam code : 54220403

Subject code : HYWH 545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This is to certify that the dissertation entitled, 'Historical Significance of the Forts of Kerala'. Incorporates the result of original research work carried out by Mrs. Karthika.R at the Department of History, Sree Narayana college Punalur, under my supervision. Such materials has been obtained from other sources duly acknowledged in this dissertation.



Counter Signed

Dr. Shibu. T

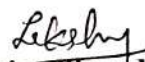
Head of the Department

Assistant Professor

Department of History

Sree Narayana College

Punalur



Supervising Signed

Ms. Lekshmy T.L

Assistant Professor

(on contract)

Department of History

Sree Narayana College

Punalur

**PROBLEMS AND CHALLENGES OF CASHEW
FACTORIES IN KERALA WITH SPECIAL
REFERENCE TO KOLLAM DISTRICT**

DISSERTATION

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

Master of Arts in History

By

RAHUL H

Candidate Code : 54222133021

Exam Code : 54220403

Subject Code : HYWH545

DEPARTMENT OF HISTORY



SREE NARAYANA COLLEGE

PUNALUR

2024

CERTIFICATE

This to certify that "PROBLEMS AND CHALLENGES OF CASHEW FACTORIES IN KERALA WITH SPECIAL REFERENCE TO KOLLAM DISTRICT" incorporates the result of original research work carried out by Mr. Rahul H at the Department of History, Sree Narayana College, Punalur. Under my supervision such material as has been obtained from other sources duly acknowledged in this project.



Counter Signed

Mr. Shibu. T

Assistant Professor

Head of the Department

Department of History

Sree Narayana College

Punalur



Supervising Signed

Dr. Deepthi. P. R

Assistant Professor

Department of History

Sree Narayana College

Punalur

HYPERCUBE GRAPHS

*Dissertation submitted to the University of Kerala in partial fulfillment of the
requirement for the degree of*

MASTER OF SCIENCE IN MATHEMATICS

Submitted by

AAGI M NEETHU

Register No. : 62021133001
Examination Code : 62020402
Subject Code : MM 245

Under the supervision of

Dr. BIJO S ANAND
Associate Professor

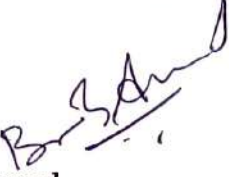


**Department of Mathematics
Sree Narayana College
Punalur, Kollam
2021-2023**

CERTIFICATE

This is to certify that this project work entitled "HYPERCUBE GRAPHS" is done by Ms.Aagi M Neethu(Register No: 62021133001) at the Department of Mathematics, Sree Narayana College, Punalur under my supervision and guidance for the partial fulfilment for the award of Master of Science in Mathematics of the University of Kerala during the period 2021-2023.

Guided by



Dr.Bijo.S.Anand

Associate Professor

Department of Mathematics

Sree Narayana College, Punalur



Dr. Divya Sadasivan

Associate Professor

Head of the Department

Department of Mathematics

Sree Narayana College, Punalur



COMBINATORIAL GROUP THEORY

*Dissertation submitted to the University of Kerala in partial fulfilment of
the requirement for the degree of*

**MASTER OF SCIENCE
IN
MATHEMATICS**

Submitted by

ABHISHEK S.

Register No. : 62021133002

Examination Code : 62020402

Subject Code : MM 245

Under the supervision of

Dr. BIJO S. ANAND

Associate Professor



Department of Mathematics

Sree Narayana College

Punalur, Kollam

2021-2023

CERTIFICATE

This is to certify that this project work entitled "COMBINATORIAL GROUP THEORY" is done by Mr. Abhishek S (Reg No: 62021133002) at the Department of Mathematics, Sree Narayana College, Punalur under my supervision and guidance for the partial fulfilment for the award of Master of Science in Mathematics of the University of Kerala during the period 2021 – 2023.



Dr. Bijo S. Anand
Associate Professor

Department of Mathematics
Sree Narayana College, Punalur



Dr. Divya Sadasivan
Associate Professor and Head
Department of Mathematics
Sree Narayana College, Punalur

Place : Punalur

Date : August 14, 2023



DOMINATION IN GRAPHS

*Dissertation submitted to the University of Kerala in partial fulfillment of the
requirement for the degree of*

MASTER OF SCIENCE IN MATHEMATICS

Submitted by

ADINA S.H

Register No. : 62021133003

Examination Code : 62020402

Subject Code : MM 245

Under the supervision of

Dr.DIVYA SADASIVAN

Associate Professor



Department of Mathematics
Sree Narayana College
Punalur, Kollam
2021-2023

CERTIFICATE

This is to certify that this project work entitled "DOMINATION IN GRAPHS" is done by Ms.Adina S.H(Register No: 62021133003) at the Department of Mathematics, Sree Narayana College, Punalur. Under my supervision and guidance for the fulfillment of the requirement for the degree of Master of Science in Mathematics of University of Kerala during the period 2021-23 and no part of this has been submitted earlier for the award of any degree.



Dr.Divya Sadasivan

Associate Professor

Department of Mathematics

Sree Narayana College, Punalur



Dr.Divya Sadasivan

Associate Professor

Head of the Department

Department of Mathematics

Sree Narayana College, Punalur



RIEMANNIAN GEOMETRY

*Dissertation submitted to the University of Kerala in partial fulfillment of the
requirement for the degree of*

MASTER OF SCIENCE IN MATHEMATICS

Submitted by

AISWARYA JAYAN

Register No. : 62021133004

Examination Code : 62020402

Subject Code : MM 245

Under the supervision of

Dr.DIVYA SADASIVAN

Associate Professor




Department of Mathematics
Sree Narayana College
Punalur, Kollam
2021-2023

CERTIFICATE

This is to certify that this project work entitled "RIEMANNIAN GEOMETRY" is done by Ms. Aiswarya Jayan (Register No: 62021133004) at the Department of Mathematics, Sree Narayana College, Punalur under my supervision and guidance for the partial fulfilment for the award of Master of Science in Mathematics of the University of Kerala during the period 2021-2023.



Head of the Department
Dr. Divya Sadasivan
Associate Professor
Department of Mathematics
Sree Narayana College, Punalur



Guided by
Dr. Divya Sadasivan
Associate Professor
Department of Mathematics
Sree Narayana College, Punalur



A STUDY ON THE PEPTIDE OR PROTEIN GRAPH OF NEUROPEPTIDES AND ITS CENTRALITY MEASURES

*Dissertation submitted to the University of Kerala in partial fulfillment of the
requirement for the degree of*

MASTER OF SCIENCE
IN
MATHEMATICS

Submitted by

AISWARYA P.

Register No. : 62021133005

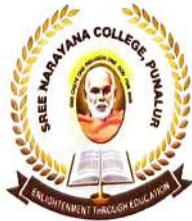
Examination Code : 62020402

Subject Code : MM 245

Under the supervision of

ATHUL T. B.

Assistant Professor



Department of Mathematics

Sree Narayana College

Punalur, Kollam

2021-2023

**SREE NARAYANA COLLEGE, PUNALUR
KOLLAM**

CERTIFICATE

This is to certify that the dissertation entitled *A Study on the Peptide or Protein Graph of Neuropeptides and its Centrality Measures* is carried out by *Aiswarya P.* under my supervision in partial fulfilment of the requirement of her Masters Degree in Mathematics, University of Kerala and that no part of this work has been submitted for the award of any degree.



Mr. Athul T. B.

Assistant professor

Department of Mathematics
Sree Narayana College, Punalur



Dr. Divya Sadasivan

Associate Professor and Head

Department of Mathematics

Sree Narayana College, Punalur



Place : Punalur

Date : August 14, 2023

A STUDY ON ENERGY OF GRAPHS

*Dissertation submitted to the University of Kerala in partial fulfillment of the
requirement for the degree of*

**MASTER OF SCIENCE
IN
MATHEMATICS**

Submitted by
AKSHARA ASHOKAN

Register No. : 62021133006
Examination Code : 62020402
Subject Code : MM 245

Under the supervision of
ATHUL T. B.
Assistant Professor



Department of Mathematics
Sree Narayana College
Punalur, Kollam
2021-2023

**SREE NARAYANA COLLEGE, PUNALUR
KOLLAM**

CERTIFICATE

This is to certify that the dissertation entitled *A Study on Energy of Graphs* is carried out by *Akshara Ashokan* under my supervision in partial fulfilment of the requirement of her Masters Degree in Mathematics, University of Kerala and that no part of this work has been submitted for the award of any degree.



Mr. Athul T. B.

Assistant professor

Department of Mathematics

Sree Narayana College, Punalur



Dr. Divya Sadasivan

Associate Professor and Head

Department of Mathematics

Sree Narayana College, Punalur



Place : Punalur

Date : August 14, 2023

AN INTRODUCTION TO TOPOLOGICAL MANIFOLDS

*Dissertation submitted to the University of Kerala in partial fulfillment of the
requirement for the degree of*

MASTER OF SCIENCE IN MATHEMATICS

Submitted by

ALFIYA A

Register No. : 62021133007

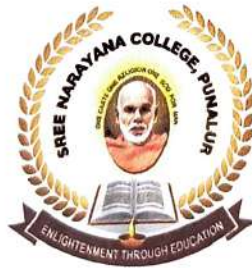
Examination code : 62020402

Subject code : MM245

Under the supervision of

ATHUL T.B.

Assistant professor



Department of Mathematics
Sree Narayana College
Punalur, Kollam
2021-2023

SREE NARAYANA COLLEGE, PUNALUR
KOLLAM

CERTIFICATE

This is to certify that the dissertation entitled *An Introduction to Topological Manifolds* is carried out by *Alfiya A* under my supervision in partial fulfillment of the requirement of her Masters Degree in Mathematics, University of Kerala and that no part of this work has been submitted for the award of any degree.



Mr. Athul T.B.

Assistant professor

Department of Mathematics

Sree Narayana College, Punalur



Dr. Divya Sadasivan

Associate Professor and Head

Department of Mathematics

Sree Narayana College, Punalur



Place : Punalur

Date : August 14, 2023

A STUDY ON RICCATI EQUATIONS

Dissertation submitted to the University of Kerala in partial fulfillment of the requirement for the degree of

**MASTER OF SCIENCE
IN
MATHEMATICS**

Submitted by

AMEENA FARSANA F S

Register No. : 62021133008
Examination Code : 62020402
Subject Code : MM 245

Under the supervision of

ATHUL T B
Assistant Professor



**Department of Mathematics
Sree Narayana College
Punalur, Kollam
2021-2023**

**SREE NARAYANA COLLEGE, PUNALUR
KOLLAM**

CERTIFICATE

This is to certify that the dissertation entitled *A STUDY ON RICCATI EQUATIONS* is carried out by *Ameena Farsana F. S.* under my supervision in partial fulfilment of the requirement of her Masters Degree in Mathematics, University of Kerala and that no part of this work has been submitted for the award of any degree.



Mr. Athul T. B.

Assistant professor

Department of Mathematics
Sree Narayana College, Punalur



Dr. Divya Sadasivan
Associate Professor and Head
Department of Mathematics
Sree Narayana College, Punalur



Place : Punalur

Date : August 14, 2023

A STUDY ON SIMPLICIAL HOMOLOGY

*Dissertation submitted to the University of Kerala in partial fulfillment of
the requirement for the degree of*

**MASTER OF SCIENCE
IN
MATHEMATICS**

Submitted by

ANJANA SUBHASH

Register No. : 62021133009

Examination Code : 62020402

Subject Code : MM 245

Under the supervision of

JASMIN ROSE J

Assistant Professor



**Department of Mathematics
Sree Narayana College
Punalur, Kollam
2021-2023**

**SREE NARAYANA COLLEGE, PUNALUR
KOLLAM
CERTIFICATE**

This is to certify that this dissertation entitled **A Study on Simplicial Homology** is carried out by *Anjana Subhash* under my supervision in partial fulfillment of the requirements for the degree of Master of Science in Mathematics, University of Kerala and that no part of this project has been submitted for the award of any degree.



Jasmin Rose J

Assistant Professor

Department of Mathematics

Sree Narayana College, Punalur



Dr. Divya Sadasivan

Assistant Professor and Head

Department of Mathematics

Sree Narayana College, Punalur



Place: Punalur

Date : , August 10, 2023

FIBRE BUNDLES

Dissertation submitted to the University of Kerala in partial fulfillment of the requirement for the award of Degree of

MASTER OF SCIENCE IN MATHEMATICS

Submitted by

ANJANA SR

Register No. : 62021133010

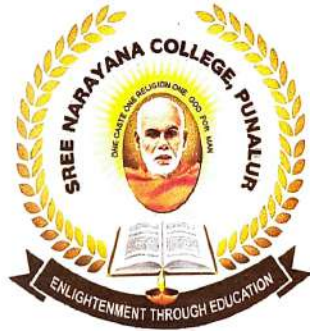
Examination Code : 62020402

Subject Code : MM245

Under the supervision of

BIJO S.ANAND

Associate Professor



Department of Mathematics
Sree Narayana College
Punalur, Kollam
2021-2023

CERTIFICATE

This is to certify that this project work entitled "FIBRE BUNDLES" is done by Ms.Anjana S.R(Register No: 62021133010) at the Department of Mathematics,Sree Narayana College, Punalur under my supervision and guidance for the partial fulfilment for the award of Master of Science in Mathematics of the University of Kerala during the period 2021 – 2023.

Guided by



Dr.Bijo S. Anand

Associate Professor

Department of Mathematics



Head of the Department

Dr. Divya Sadasivan

Associate Professor

Department of Mathematics

Sree Narayana College,Punalur



A STUDY ON TOPOLOGICAL GROUPS

*Dissertation submitted to the University of Kerala in partial fulfillment of the
requirement for the degree of*

MASTER OF SCIENCE IN MATHEMATICS

Submitted by

ASHILI RAJ

Register No. : 62021133011
Examination Code : 62020402
Subject Code : MM 245

Under the supervision of

JASMINE ROSE J
Assistant Professor



Department of Mathematics
Sree Narayana College
Punalur, Kollam
2021-2023

**SREE NARAYANA COLLEGE, PUNALUR
KOLLAM**

CERTIFICATE

This is to certify that this dissertation entitled "A STUDY ON TOPOLOGICAL GROUPS" is carried out by Ashili Raj under my supervision in partial fulfillment of the requirement for the degree of Master of Science in Mathematics, University of Kerala and that no part of this work has been submitted for the award of any degree.



Jasmin Rose J

Assistant Professor

Department of Mathematics

Sree Narayana College, Punalur



Dr. Divya Sadasivan

Assistant Professor and Head

Department of Mathematics

Sree Narayana College, Punalur

Place : Punalur

Date : August 14, 2023



TUTTE POLYNOMIAL AND ITS APPLICATIONS

*Dissertation submitted to the University of Kerala in partial fulfillment of the
requirement for the degree of*

MASTER OF SCIENCE

IN

MATHEMATICS

Submitted by

ASHNA S

Register No. : 62021133012

Examination Code : 62020402

Subject Code : MM 245

Under the supervision of

Dr.DIVYA SADASIVAN

Associate Professor



Department of Mathematics
Sree Narayana College
Punalur, Kollam
2021-2023

Sree Narayana College, Punalur, Kollam

CERTIFICATE

This is to certify that this project work entitled "TUTTE POLYNOMIAL AND ITS APPLICATIONS" is done by Ms.ASHNA S,(Register No: 62021133012) under my supervision and guidance for the partial fulfillment for the award of Master of Science in Mathematics from University of Kerala during the period 2021-2023.



Dr.Divya Sadasivan

Associate Professor

Department of Mathematics

Sree Narayana College,Punalur



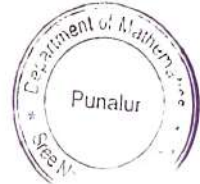
Dr.Divya Sadasivan

Associate Professor

Head of the Department

Department of Mathematics

Sree Narayana College, Punalur



HOMOLOGICAL ALGEBRA

*Dissertation submitted to the University of Kerala in partial fulfillment of the
requirement for the Degree of*

MASTER OF SCIENCE IN MATHEMATICS

Submitted by
ASWATHY U S

Candidate Code : 62021133013
Exam Code : 62020402
Subject Code : MM 245

Under the supervision of
JASMIN ROSE J
Assistant Professor



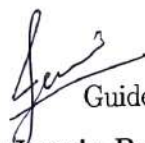
Department of Mathematics
Sree Narayana College
Punalur, Kollam
2021-2023

SREE NARAYANA COLLEGE,PUNALUR

KOLLAM

CERTIFICATE

This is to certify that this project work entitled "HOMOLOGICAL ALGEBRA" is done by Ms.**ASWATHY U S** ,(Register No : 62021133013) at the Department of Mathematics , Sree Narayana College, Punalur under my supervision and guidance for the partial fulfillment for the award of Master of Science in Mathematics from University of Kerala during the period 2021-2023 .



Guided by

Ms.Jasmin Rose J

Assistant Professor

Department of Mathematics

Sree Narayana College, Punalur



Head of Department

Dr.Divya Sadasivan

Associate professor

Department of Mathematics

Sree Narayana College, Punalur



Place : Punalur

Date : August 14 ,2023

A STUDY ON HYPERGRAPHS AND FRACTIONAL GRAPHS

*Dissertation submitted to the University of Kerala in partial fulfillment of the
requirement for the degree of*

**MASTER OF SCIENCE
IN
MATHEMATICS**

Submitted by
ATHIRA A.

Register No. : 62021133014

Examination Code : 62020402

Subject Code : MM 245

Under the supervision of

ATHUL T. B.

Assistant Professor



Department of Mathematics

Sree Narayana College

Punalur, Kollam

2021-2023

**SREE NARAYANA COLLEGE, PUNALUR
KOLLAM**

CERTIFICATE

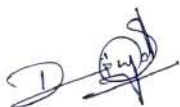
This is to certify that the dissertation entitled *A Study on Hypergraphs and Fractional Graphs* is carried out by *Athira A.* under my supervision in partial fulfilment of the requirement of her Masters Degree in Mathematics, University of Kerala and that no part of this work has been submitted for the award of any degree.



Mr. Athul T. B.

Assistant professor

Department of Mathematics
Sree Narayana College, Punalur



Dr. Divya Sadasivan

Associate Professor and Head

Department of Mathematics

Sree Narayana College, Punalur



Place : Punalur

Date : August 14, 2023

SPORADIC SIMPLE GROUPS

*Dissertation submitted to the University of Kerala in partial fulfilment of the
requirement for the degree of*

MASTER OF SCIENCE IN MATHEMATICS

Submitted by
FREEDA MARY

Candidate Code : 62021133015
Exam Code : 62020402
Subject Code : MM245
Year : 2023

Under the supervision of
DR. DIVYA SADASIVAN
Associate Professor



**Department of Mathematics
Sree Narayana College
Punalur, Kollam
2021-2023**

Sree Narayana College, Punalur, Kollam

CERTIFICATE

I hereby certify that, this project entitled "Sporadic Simple Groups" is a project work carried out by Freeda Mary (Register No:62021133015) under my guidance and supervision in partial fulfillment of the requirement for the Masters Degree in Mathematics of the University Of Kerala and that no part of this work has been submitted for the award of any degree.



Supervised by,

Dr.Divya Sadasivan

Associate Professor

Department of Mathematics

Sree Narayana College, Punalur



Dr.Divya Sadasivan

Associate Professor

Head of the Department

Department of Mathematics

Sree Narayana College, Punalur



SOFT GRAPHS

Dissertation submitted to the University of Kerala in partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE IN MATHEMATICS

Submitted by

MALAVIKA S

Register No. : 62021133016
Examination Code : 62020402
Subject Code : MM 245

Under the supervision of

Dr. BIJO S ANAND
Associate Professor

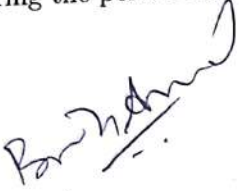


**Department of Mathematics
Sree Narayana College
Punalur, Kollam
2021-2023**

CERTIFICATE

This is to certify that this project work entitled "SOFT GRAPHS" is done by Ms.Malavika S(Register No: 62021133016) at the Department of Mathematics, Sree Narayana College, Punalur under my supervision and guidance for the partial fulfilment for the award of Master of Science in Mathematics of the University of Kerala during the period 2021-2023.

Guided by



Dr.Bijo.S.Anand

Associate Professor

Department of Mathematics

Sree Narayana College, Punalur



Dr. Divya Sadasivan

Associate Professor

Head of the Department

Department of Mathematics

Sree Narayana College, Punalur



DISCRETE MORSE THEORY AND PERSISTENT HOMOLOGY

*Dissertation submitted to the University of Kerala in partial fulfillment of the
requirement for the degree of*

Master of Science in Mathematics

Submitted by

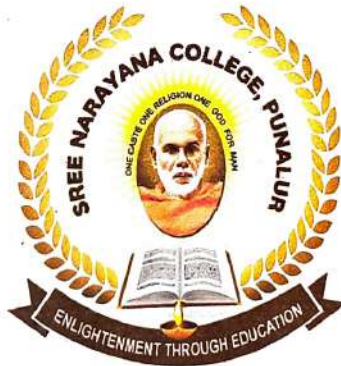
NAVAL BABUJAN

Register No. : 62021133017
Examination code : 62020402
Subject code : MM 245

Under the supervision of

Dr BIJO S ANAND

Associate Professor



Department of Mathematics

Sree Narayana College

Punalur , Kollam

2021-2023

CERTIFICATE

This is to certify that this project work entitled "DISCRETE MORSE THEORY AND PERSISTENT HOMOLOGY" is done by Ms. Naval Babujan (Register No: 62021133017) at the Department of Mathematics, Sree Narayana College, Punalur under the supervision and guidance for the partial fulfilment for the award of Master of Science in Mathematics of the University of Kerala during the period 2021-2023.

Guided by



Dr. Bijo S Anand

Associate Professor

Department of Mathematics

Sree Narayana College , Punalur



Head of Department

Dr. Divya Sadasivan

Associate Professor

Department of Mathematics

Sree Narayana College, Punalur



FINITE FRAMES AND ITS APPLICATIONS

*Dissertation submitted to the University of Kerala in partial fulfillment of the
requirement for the degree of*

**MASTER OF SCIENCE
IN
MATHEMATICS**

Submitted by
RAJASREE R S

Candidate Code : 62021133018
Exam Code : 62020402
Subject Code : MM 245

Under the supervision of

JASMIN ROSE J
Assistant Professor



**Department of Mathematics
Sree Narayana College
Punalur, Kollam
2021-2023**

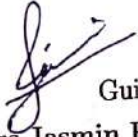
**SREE NARAYANA COLLEGE, PUNALUR
KOLLAM**

CERTIFICATE

This is to certify that this dissertation entitled "FINITE FRAMES AND ITS APPLICATION" is carried out by Ms.RAJASREE R.S (Register No: 62021133018) under my guidance and supervision in partial fulfillment of the requirements for the award of Master of Science in Mathematics from University of Kerala during the period 2021-2023 and that no part of this work has been submitted for the award of any degree.



Head of the Department
Dr.Divya Sadasivan
Associate Professor
Department of Mathematics
Sree Narayana College, Punalur



Guided by
Mrs.Jasmin Rose J
Assistant Professor
Department of Mathematics
Sree Narayana College, Punalur



Place : Punalur
Date : August 14, 2023

THE MOUNTAIN PASS THEOREM

*Dissertation submitted to the University of Kerala in partial fulfilment
of the requirement for the award of degree of*

MASTER OF SCIENCE IN MATHEMATICS

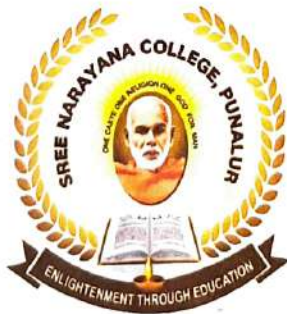
Submitted by

RESHMA R L

Candidate code : 62021133019
Exam Code : 62020402
Subject Code : MM 245

Under the supervision of

JASMINE ROSE J
Assistant Professor



Department of Mathematics
Sree Narayana College
Punalur, Kollam
2021 - 2023

CERTIFICATE

This is to certify that this project work entitled “THE MOUNTAIN PASS THEOREM” is done by Ms. Reshma R L (Register No: 62021133019) at the department of Mathematics, Sree Narayana College, Punalur under my supervision and guidance for the partial fulfillment for the award of Master of Science in Mathematics of the University of Kerala during the period 2021 – 2023.



Head of the Department

Dr. Divya Sadasivan

Assistant Professor

Department of Mathematics

Sree Narayana College, Punalur



Guided by

Jasmin Rose J

Assistant Professor

Department of Mathematics

Sree Narayana College, Punalur



C*ALGEBRA

*Dissertation submitted to the University of Kerala in partial fulfillment of the
requirement for the award of Degree of*

MASTER OF SCIENCE IN MATHEMATICS

Submitted by

RESHMA S S

Register No : 62021133020

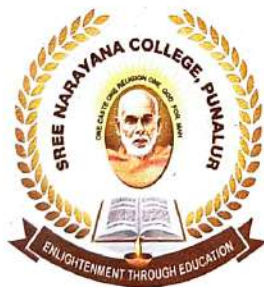
Examination code : 62020402

Subject code : MM 245

Under the supervision of

BIJO S ANAND

Associate Professor



Department of Mathematics
Sree Narayana College
Punalur, Kollam
2021-2023

CERTIFICATE

This is to certify that this project work entitled " C* ALGEBRA " is done by Ms. Reshma S.S (Register No: 62021133020) Department of Mathematics, Sree Narayana College, Punalur under my supervision and guidance for the partial fulfillment for the award of Master of Science in Mathematics of the University Of Kerala during the period 2021- 2023.

Guided by



Dr. Bijo S Anand

Associate Professor

Department of Mathematics

Sree Narayana College, Punalur



Head of the Department

Dr. Divya Sadasivan

Associate Professor

Department of Mathematics

Sree Narayana College, Punalur



Graceful Labeling and its Variations

*Dissertation submitted to the University of Kerala in partial fulfilment of the
requirement for the degree of*

MASTER OF SCIENCE IN MATHEMATICS

Submitted by

VAISHNAVY S

Register Number : 62021133021
Exam Code : 62020402
Subject Code : MM245
Year : 2023

Under the supervision of

DR.DIVYA SADASIVAN

Associate Professor



Department of Mathematics
Sree Narayana College
Punalur, Kollam
2021-2023

Sree Narayana College, Punalur, Kollam

CERTIFICATE

I hereby certify that, this project entitled "Graceful Labeling and its Variations" is a project work carried out by VAISHNAVY S (Register No. : 62021133021) under my guidance and supervision in partial fulfillment of the requirement for the Masters Degree in Mathematics of the University Of Kerala and that no part of this work has been submitted for the award of any degree.



Supervised by,

Dr. Divya Sadasivan

Associate Professor

Department of Mathematics

Sree Narayana College, Punalur.



Dr. Divya Sadasivan

Associate Professor

Head of the Department

Department of Mathematics

Sree Narayana College, Punalur.



Place : Punalur

Date :

A STUDY ON RECONSTRUCTION IN GRAPH THEORY

*Dissertation submitted to the University of Kerala in partial fulfillment of the
requirement for the degree of*

**MASTER OF SCIENCE
IN
MATHEMATICS**

Submitted by
VIDYA V.

Register No. : 62021133022

Examination Code : 62020402

Subject Code : MM 245

Under the supervision of

ATHUL T. B.

Assistant Professor



Department of Mathematics

Sree Narayana College

Punalur, Kollam

2021-2023

**SREE NARAYANA COLLEGE, PUNALUR
KOLLAM**

CERTIFICATE

This is to certify that the dissertation entitled *A Study on Reconstruction in Graph Theory* is carried out by *Vidya V.* under my supervision in partial fulfilment of the requirement of her Masters Degree in Mathematics, University of Kerala and that no part of this work has been submitted for the award of any degree.



Mr. Athul T. B.

Assistant professor

Department of Mathematics

Sree Narayana College, Punalur



Dr. Divya Sadasivan
Associate Professor and Head
Department of Mathematics
Sree Narayana College, Punalur



Place : Punalur

Date : August 14, 2023

**SUGARCANE BAGASSE- DERIVED GRAPHENE
OXIDE: A LOW - COST AND ECO - FRIENDLY
MATERIAL**



*A project submitted to the University of Kerala in partial fulfilment of the
requirement for award of the Degree of Master of science in Physics*

K.P. VISHNU PILLAI

SREENARAYANA COLLEGE PUNALUR

CANDIDATE CODE: 63022133012

UNDER THE GUIDANCE OF

DR. RANI K PILLAI

ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS

AND CO-GUIDANCE OF

DR. REJANI P

ASSISTANT PROFESSOR

DEPARTMENT OF CHEMISTRY

NSS COLLEGE, NILAMEL

CERTIFICATE

This is to certify that the Project Report entitled “Exploring the synthesis and properties of graphene oxide: A comprehensive study” being submitted to the University of Kerala, for the partial fulfilment of the requirement for the award of degree of Master of science in Physics, is bonafide work done by K.P. VISHNU PILLAI (63022133012). He has carried out this work carefully and sincerely. His work has been approved for submission.



DR. RANI K PILLAI

Assistant Professor

Department of Physics

N.S.S College, Nilamel



DR. REJANI P

Assistant Professor

Department of Chemistry

N.S.S College, Nilamel

**STRUCTURAL, MORPHOLOGICAL AND
SPECTRAL STUDIES OF SILVER
NANOPARTICLES**



*A project submitted to the University of Kerala in partial fulfilment of the requirement for
award of the Degree of Master of Science in Physics*

HRIDYA S KUMAR
SREENARAYANA COLLEGE PUNALUR
CANDIDATE CODE: 63022133011
UNDER THE GUIDANCE OF
Ms. ASHA G
ASSISTANT PROFESSOR
DEPARTMENT OF PHYSICS
St.GREGORIOS COLLEGE, KOTTARAKKARA

CERTIFICATE

This is to certify that the Project Report entitled “**Structural, morphological and spectral studies of silver nanoparticles**” submitted to the Department of Physics, Sree Narayana College Punalur, University of Kerala is bonafide work done by HRIDYA S KUMAR (63022133011). She has carried out this work carefully and sincerely. Her work has been approved for submission.



Ms. ASHA G

Assistant professor

Department of Physics

St.Gregorios College, Kottarakkara



**Structural Morphological and Optical Studies on BaO
Nanoparticles Synthesized Through
Chrysin Mediation**

A project report submitted to the University of Kerala in partial fulfillment of the
requirement for award of the Degree of Master of Science in Physics discipline
from

University of Kerala

KRISHNA GIRI

CANDIDATE CODE: 63022133013



UNDER THE SUPERVISION OF

PRAVEEN K H

(Assistant Professor, SN College Punalur)

DEPARTMENT OF PHYSICS

SN COLLEGE

PUNALUR

2022-24



CERTIFICATE

This is to certify that the project report entitled “**Structural Morphological and Optical Studies on BaO Nanoparticles Synthesised Through Chrysin Mediation**”, being submitted to the University of Kerala, in partial fulfillment of the requirement for the award of the MSc degree in physics, represents a work carried out by the MSc Physics final year student , **KRISHNA GIRI** , Department of Physics, Sree Narayana College, Punalur.

Mrs ASITHA L R

HOD, Department of Physics
DEPARTMENT OF PHYSICS
SREE NARAYANA COLLEGE, PUNALUR
Sree Narayana College, Punalur

Mr Praveen K H

Assistant Professor, Department of Physics
Sree Narayana College, Punalur



Signature of Examiners:

1.

2.

**SYNTHESIS AND CHARACTERIZATION OF PbS
NANOPARTICLES BY MICROWAVE ASSESSED
SOLVOTHERMAL METHOD**

A project report submitted to the



University of Kerala

In partial fulfilment of the requirements for the Degree of Master of Science in Physics from

University of Kerala

MEGHANA DILEEP

CANDIDATE CODE: 63022133014

UNDER THE SUPERVISION OF

Dr. S RINU SAM

(Assistant Professor, St. Gregorios College Kottarakara)

DEPARTMENT OF PHYSICS

SREE NARAYANA COLLEGE PUNALUR

2022 – 2024



Department of Physics

St. GREGORIOS COLLEGE KOTTARAKARA

CERTIFICATE

This is to certify that the project report entitled "SYNTHESIS AND CHARACTERIZATION OF PbS NANOPARTICLES BY MICROWAVE ASSESSED SOLVOTHERMAL METHOD", being submitted to the University of Kerala, in partial fulfillment of the requirement for the award of the MSc degree in Physics, represents a work carried out by the MSc final year student, **MEGHANA DILEEP** (Candidate code: **63022133014**), Department of Physics, SREE NARAYANA COLLEGE PUNALUR.


Dr. S RINU SAM

Assistant Professor



**THE EFFECT OF M-CRESOL IN POLYANILINE
DOPED WITH SULFONIC ACID**

A project report submitted to the



University of Kerala

*in partial fulfilment of the requirements for the award of the Degree of master of science in
physics from University of Kerala*

MEGHNA S SHAJI

CANDIDATE CODE: 63022133015

UNDER THE SUPERVISION OF

DR. RATHEESH R

(Assistant Professor, Sree Narayana College Punalur)

DEPARTMENT OF PHYSICS

SREE NARAYANA COLLEGE PUNALUR

2022-2024



Department of physics
SREE NARAYANA COLLEGE PUNALUR

CERTIFICATE

This is to certify that the project report entitled "THE EFFECT OF M-CRESOL IN POLYANILINE DOPED SULFONIC ACID", being submitted to the University of Kerala, in partial fulfilment of the requirement for the award of the MSc degree in Physics, represents a work carried out by the MSc final year student, MEGHNA S SHAJI (Candidate code: 63022133015), Department of Physics, SREE NARAYANA COLLEGE PUNALUR.

DR. RATHEESH R

Assistant Professor



**MICROPLASTICS IN RAINWATER: A CASE
STUDY FROM VELIYAM, KERALA**

A project report submitted to the



University of Kerala

In partial fulfilment of the requirements for the award of the Degree of master of science in

Physics from university of kerala

NAYANA RAJ

CANDIDATE CODE: 63022133016

UNDER THE SUPERVISION OF

DR. KRISHNA KUMAR V

(Assistant Professor, Centre for Atmospheric Studies ,

Department of Physics, St..Gregorios College, Kottarakara)

DEPARTMENT OF PHYSICS

SREE NARAYANA COLLEGE PUNALUR

2022-2024

SREE NARAYANA COLLEGE, PUNALUR



Department of physics

SREE NARAYANA COLLEGE PUNALUR

CERTIFICATE

This is to certify that the project report entitled "**MICROPLASTICS IN RAINWATER: A CASE STUDY FROM VELIYAM, KERALA**", being submitted to the University of Kerala, in partial fulfilment of the requirement for the award of the MSc degree in Physics, represents a work carried out by the MSc final year student, **NAYANA RAJ** (Candidate code: **63022133016**), Department of Physics, SREE NARAYANA COLLEGE PUNALUR.

MS. ASHNA L R

Head, Department of physics

Sree Narayana College Punalur

DEPARTMENT OF PHYSICS
S. N. COLLEGE PUNALUR

Signature of Examiners:

1.

2.



**STRUCTURAL DETERMINATION AND OPTICAL
CHARACTERIZATION OF PbS NANOPARTICLES BY
SOLVOTHERMAL METHOD**



UNIVERSITY OF KERALA

A project submitted to the University of Kerala in partial fulfilment of the requirements for the award of the Degree of Master of Science in Physics

POOJA PRAKASH

(CANDIDATE CODE:63022133017)

SREE NARAYANA COLLEGE PUNALUR

UNDER THE SUPERVISION OF

DR. S RINU SAM

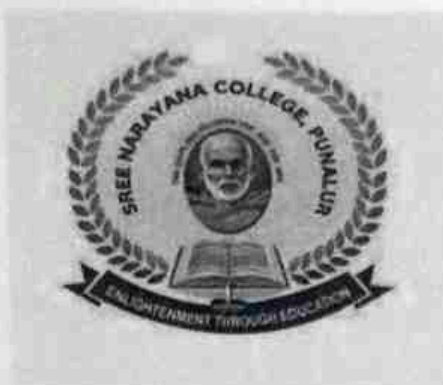
ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS

ST. GREGORIOS COLLEGE, KOTTARAKKARA

Year of Study 2022-2024

SREE NARAYANA COLLEGE PUNALUR



DEPARTMENT OF PHYSICS


CERTIFICATE

This is to certify that the Project Report entitled “**STRUCTURAL DETERMINATION AND OPTICAL CHARACTERIZATION OF PbS NANOPARTICLES BY SOLVOTHERMAL METHOD**” submitted to the Department of Physics Sree Narayana College Punalur, University of Kerala is bonafied work done by **POOJA PRAKASH (63022133017)** Department of Physics Sree Narayana College, Punalur.


MS. ASTHA L R

Head of the Department
Department of Physics
Sree Narayana College, Punalur

Examiners:

1:  **Dr. Insuvar** CR,

2:  **03/10/24**

**AIRBORNE MICROPLASTICS: SOURCES,
DISTRIBUTION AND HEALTH IMPLICATIONS
- A COMPREHENSIVE REVIEW**

A project report submitted to the



University of Kerala

*In partial fulfillment of the requirements for the award of the Degree of master of science in
Physics from university of kerala*

SARANGI. S. NAIR

CANDIDATE CODE: 63022133019

UNDER THE SUPERVISION OF

DR. KRISHNA KUMAR V

*(Assistant Professor, Centre for Atmospheric Studies, Department of
Physics, St. Gregorios College, Kottarakkara)*

DEPARTMENT OF PHYSICS

SREE NARAYANA COLLEGE PUNALUR

2022-24



Department of physics

SREE NARAYANA COLLEGE PUNALUR

CERTIFICATE

This is to certify that the project report entitled “ **AIRBORNE MICROPLASTICS : SOURCES, DISTRIBUTION AND HEALTH IMPLICATIONS - A COMPREHENSIVE REVIEW** ”, being submitted to the University of Kerala, in partial fulfillment of the requirement for the award of the MSc degree in Physics, represents a work carried out by the MSc final year student, SARANGI. S. NAIR(Candidate code: **63022133019**), Department of Physics, SREE NARAYANA COLLEGE PUNALUR.

MS. ASITHA DR

Head, Department of physics

Sree Narayana College Punalur

DEPARTMENT OF PHYSICS
SREE NARAYANA COLLEGE PUNALUR

Signature of Examiners:

1.

2.



FLOURESCENCE MICROSCOPY DETECTION AND FTIR ANALYSIS OF MICROPLASTICS COLLECTED FROM A COASTAL LOCATION USING PASSIVE SAMPLING TECHNIQUES

A project report submitted to the



University of Kerala

*In partial fulfilment of the requirements for the award of the Degree of Master of Science in
Physics from University of Kerala*

POOJA VIJAYAN

CANDIDATE CODE: 63022133018

UNDER THE SUPERVISION OF

DR. KRISHNAKUMAR V

*(Assistant Professor, Centre for Atmospheric studies ,
Department of Physics, St.Gregorios College, Kottarakara)*

DEPARTMENT OF PHYSICS

SREE NARAYANA COLLEGE PUNALUR

2022-2024



Department of Physics
SREE NARAYANA COLLEGE PUNALUR

CERTIFICATE

This is to certify that the project report entitled “**FLOURESCENCE MICROSCOPY DETECTION AND FTIR ANALYSIS OF MICROPLASTICS COLLECTED FROM A COASTAL LOCATION USING PASSIVE SAMPLING TECHNIQUES**” being submitted to the University of Kerala, in partial fulfilment of the requirement for the award of the M.Sc degree in Physics, represents a work carried out by the M.Sc final year student, **POOJA VIJAYAN** (Candidate code: **63022133018**), Department of Physics, Sree Narayana College Punalur.


MS. ASITHA L R

Head, Department of Physics
Sree Narayana College Punalur

DEPARTMENT OF PHYSICS
S. N. COLLEGE PUNALUR

Signature of Examiners:

1.

2.



**AC CONDUCTIVITY AND DIELECTRIC
STUDIES OF PHOSPHORIC ACID DOPED
POLYANILINE PREPARED VIA CHEMICAL
OXIDATIVE POLYMERIZATION**

A Project report submitted to the



University of Kerala

in partial fulfilment of the requirements for the award of the Degree of Master of Science in

Physics from University of Kerala

SRUTHI K SURESH

CANDIDATE CODE: 63022133021

UNDER THE SUPERVISION OF

DR. RATHEESH R

(Assistant Professor, Sree Narayana College Punalur)

DEPARTMENT OF PYSICS

SREE NARAYANA COLLEGE PUNALUR

2022-2024



Department of physics

SREE NARAYANA COLLEGE, PUNALUR

CERTIFICATE

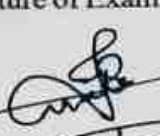
This is to certify that the project report entitled "AC CONDUCTIVITY AND DIELECTRIC STUDIES OF PHOSPHORIC ACID DOPED POLYANILINE PREPARED VIA CHEMICAL OXIDATIVE POLYMERIZATION", being submitted to the University of Kerala, in partial fulfilment of the requirement for the award of the MSc degree in Physics, represents a work carried out by the MSc Physics final year student, **SRUTHI K SURESH** (Candidate code: 63022133021), Department of Physics, SREE NARAYANA COLLEGE PUNALUR.

MS. ASITHA

DEPARTMENT OF PHYSICS
S. N. COLLEGE, PUNALUR
Head, Department of physics

Sree Narayana College, Punalur

Signature of Examiners:

1.  R. Suresh C.P.R.

2.  03/10/24

**HESPERIDIN MEDIATED SYNTHESIS AND
SPECTRAL ANALYSIS OF BaO
NANOPARTICLES**

*A Project submitted to the University of Kerala in partial fulfilment of the requirement for
award of the Degree of Master of Science in Physics*



University of Kerala

SIDHI KRISHNAN G.S

CANDIDATE CODE: 63022133020

UNDER THE SUPERVISION OF

PRAVEEN K H

Assistant professor, Sree Narayana college, Punalur

Department Of Physics

SREE NARAYANA COLLEGE, PUNALUR

2022-2024



Department Of Physics

SREE NARAYANA COLLEGE, PUNALUR

CERTIFICATE

This document serves to certify that the project report titled "HESPERIDIN MEDIATED SYNTHESIS AND SPECTRAL ANALYSIS OF BaO NANOPARTICLES" is being submitted to the University of Kerala as part of the requirements for the MSc degree in Physics. This work has been conducted by **SIDHI KRISHNAN G S**, a final year MSc Physics student (Candidate code: 63022133020), from the Department of Physics at Sree Narayana College Punalur.

MS. ASITHA L R

DEPARTMENT OF PHYSICS
SREE NARAYANA COLLEGE PUNALUR

Head, Department of Physics

Sree Narayana College Punalur

Signature Of Examiners:

1.

2.

EXPLORING THE SYNTHESIS AND PROPERTIES OF POLYINDOLE: A COMPREHENSIVE STUDY



*A project submitted to the University of Kerala in partial fulfilment of the requirement for
award of the Degree of Master of science in Physics*

VISHNU SEKHAR

SREENARAYANA COLLEGE PUNALUR

CANDIDATE CODE: 63022133022

UNDER THE GUIDANCE OF

DR. RANI K PILLAI

ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS

AND CO-GUIDANCE OF

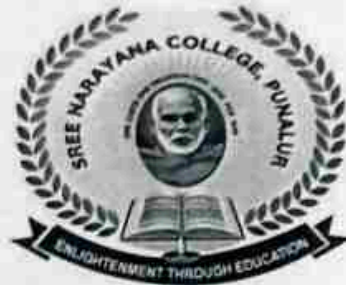
DR. REJANI P

ASSISTANT PROFESSOR

DEPARTMENT OF CHEMISTRY

NSS COLLEGE, NILAMEL


SREE NARAYANA COLLEGE PUNALUR



DEPARTMENT OF PHYSICS

CERTIFICATE

This is to certify that the Project Report entitled "Exploring the synthesis and properties of polyindole: A comprehensive study" being submitted to the University of Kerala, for the partial fulfilment of the requirement for the award of degree of Master of Science in Physics is bonafied work done by VISHNU SEKHAR (63022133022) Department of Physics, Sree Narayana College, Punalur.


MS. ASITHA L.R. COLLEGE PUNALUR
DEPARTMENT OF PHYSICS
Head of the Department
Department of Physics
Sree Narayana College, Punalur

Examiner

1.

2.

**PRAWN SHELL – DERIVED CHITOSAN:
SYNTHESIS, PURIFICATION, AND
PHYSICOCHEMICAL ANALYSIS**



**A project submitted to the University of Kerala in partial fulfilment of the
requirement for award of the Degree of Master of science in Physics**

VIVEK S

SREENARAYANA COLLEGE PUNALUR

CANDIDATE CODE: 63022133023

UNDER THE GUIDANCE OF

DR. RANI K PILLAI

ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS

AND CO-GUIDANCE OF

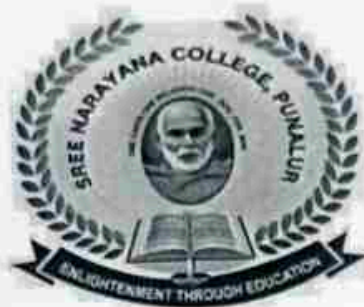
DR. REJANI P

ASSISTANT PROFESSOR

DEPARTMENT OF CHEMISTRY

NSS COLLEGE, NILAMEL

SREE NARAYANA COLLEGE PUNALUR



DEPARTMENT OF PHYSICS

CERTIFICATE

This is to certify that the Project Report entitled "PRAWN SHELL - DERIVED CHITOSAN : SYNTHESIS , AND PSYCHOCHEMICAL ANALYSIS" submitted to the University of Kerala for the partial fulfilment of the requirement for the award of degree of Master of Science in Physics is bonafied work done by VIVEK S (63022133023)). He has carried out this work carefully and sincerely. His work has been approved for submission.


DEPARTMENT OF PHYSICS
SREE NARAYANA COLLEGE, PUNALUR
MS. ASITHA L R

Head of the Department of Physics
Sree Narayana College, Punalur

Examiner

- 1.
- 2.

**PREPARATION, CHARACTERIZATION AND
ELECTRICAL CONDUCTIVITY OF PTSA
DOPED POLYANILINE**

A project report submitted to the



University of Kerala

*in partial fulfilment of the requirements for the award of the Degree of master of science in
physics from University of Kerala*

ABHIJITH V

CANDIDATE CODE: 63022133001

UNDER THE SUPERVISION OF

DR. RATHEESH R

(Assistant Professor, Sree Narayana College Punalur)

DEPARTMENT OF PHYSICS

SREE NARAYANA COLLEGE PUNALUR

2022-2024




Department of physics

SREE NARAYANA COLLEGE PUNALUR

CERTIFICATE

This is to certify that the project report entitled "**PREPARATION, CHARACTERIZATION AND ELECTRICAL CONDUCTIVITY OF PTSA DOPED POLYANILINE**", being submitted to the University of Kerala, in partial fulfilment of the requirement for the award of the MSc degree in Physics, represents a work carried out by the MSc final year student, **ABHIJITH V** (Candidate code: **63022133001**), Department of Physics, SREE NARAYANA COLLEGE PUNALUR.


MS. ASITHA L R

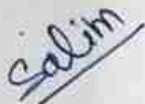
**DEPARTMENT OF PHYSICS
SREE NARAYANA COLLEGE PUNALUR**

Head, Department of physics

Sree Narayana College Punalur

Signature of Examiners:

1.



2.



**DIELECTRIC AND AC CONDUCTIVITY
STUDIES OF SULPHURIC ACID-DOPED
POLYANILINE PREPARED VIA CHEMICAL
SYNTHESIS METHOD**

A project report submitted to the



University of Kerala

*in partial fulfilment of the requirements for the award of the Degree of Master of Science in
physics from University of Kerala*

AKSHARA B S

CANDIDATE CODE: 63022133002

UNDER THE SUPERVISION OF

DR. RATHEESH R

(Assistant Professor, Sree Narayana College Punalur)

DEPARTMENT OF PHYSICS

SREE NARAYANA COLLEGE PUNALUR

2022-2024



Department of physics

SREE NARAYANA COLLEGE PUNALUR

CERTIFICATE

This is to certify that the project report entitled "**DIELECTRIC AND AC CONDUCTIVITY STUDIES OF SULPHURIC ACID DOPED-POLYANILINE PREPARED VIA CHEMICAL SYNTHESIS METHOD**", being submitted to the University of Kerala, in partial fulfilment of the requirement for the award of the MSc degree in Physics, represents a work carried out by the MSc final year student, **AKSHARA B S** (Candidate code: **63022133002**), Department of Physics, SREE NARAYANA COLLEGE PUNALUR.

DEPARTMENT OF PHYSICS
SREE NARAYANA COLLEGE, PUNALUR

MS. ASITHA L R

Head, Department of physics

Sree Narayana College Punalur

Signature of Examiners:

- 1.
- 2.

**STRUCTURAL, MORPHOLOGICAL AND
OPTICAL STUDIES ON Y_2O_3 NANOPARTICLES
SYNTHESISED THROUGH HESPERIDIN
MEDIATION**

A Project report submitted to the



University of Kerala

*In partial fulfilment of the requirements for the award of the Degree of Master of Science in
Physics from University of Kerala*

AMEENA RAFEEK

CANDIDATE CODE: 63022133003

UNDER THE SUPERVISION OF

Mr. PRAVEEN K H

(Assistant Professor, Sree Narayana College Punalur)

DEPARTMENT OF PHYSICS

SREE NARAYANA COLLEGE PUNALUR

2022-2024



Department of Physics

SREE NARAYANA COLLEGE, PUNALUR

CERTIFICATE

This is to certify that the project report entitled "**STRUCTURAL, MORPHOLOGICAL AND OPTICAL STUDIES ON Y_2O_3 NANOPARTICLES SYNTHESISED THROUGH HESPERIDIN MEDIATION**", being submitted to the University of Kerala, in partial fulfilment of the requirement for the award of the MSc degree in Physics, represents a work carried out by the MSc final year student, **AMEENA RAFEEK** (Candidate code: **63022133003**), Department of Physics, SREE NARAYANA COLLEGE, PUNALUR.



DEPARTMENT OF PHYSICS
SREE NARAYANA COLLEGE, PUNALUR
MS. ASITHA L R

Head, Department of Physics

Sree Narayana College, Punalur

Signature of Examiners:

1. 

2. 

STRUCTURAL AND OPTICAL STUDIES OF POTASSIUM IODIDE CRYSTAL

*A project report submitted to the University of Kerala in partial fulfilment of the
requirements for the award of the Degree of master of science in physics from*

University of Kerala

ASWANI T NAIR

CANDIDATE CODE: 63022133004



UNDER THE SUPERVISION OF

DR. INDULAL C R

(Assistant Professor, St Gregorios College Kottarakkara)

DEPARTMENT OF PHYSICS

SREE NARAYANA COLLEGE PUNALUR

2022-2024



Department of physics

SREE NARAYANA COLLEGE

PUNALUR

CERTIFICATE

This is to certify that the project report entitled “**STRUCTURAL AND OPTICAL STUDIES OF POTASSIUM IODIDE CRYSTAL**”, being submitted to the University of Kerala, in partial fulfilment of the requirement for the award of the MSc degree in Physics, represents a work carried out by the MSc final year student, **ASWANI T NAIR** (Candidate code: **63022133004**), Department of Physics, SREE NARAYANA COLLEGE PUNALUR.


DEPARTMENT OF PHYSICS
SREE NARAYANA COLLEGE, PUNALUR
MS. ASTHA L R

Head, Department of physics

Sree Narayana College Punalur

Signature of Examiners:

1.

2.

**MAGNETIC AND RHEOLOGICAL
CHARACTERISTICS OF
COBALT OXIDE MAGNETIC NANO FLUIDS**

A PROJECT REPORT SUBMITTED TO



UNIVERSITY OF KERALA, THIRUVANANTHAPURAM

**IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF
THE DEGREE OF**

MASTER OF SCIENCE

IN PHYSICS

By

ASWATHY RAJAN

CANDIDATE CODE: 63022133005

2022-2024



DEPARTMENT OF PHYSICS
SREE NARAYANA COLLEGE
PUNALUR

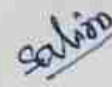
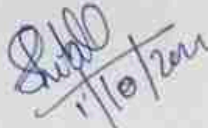
CERTIFICATE

This is to certify that the project dissertation entitled "MAGNETIC AND RHEOLOGICAL CHARACTERISTICS OF COBALT OXIDE MAGNETIC NANO FLUIDS" is the bonafide record of work done by ASWATHY RAJAN (Candidate code: 63022133005), MSc. Fourth Semester, Department of Physics, SREE NARAYANA COLLEGE, PUNALUR in the partial fulfillment of requirements for the award of Degree of Master of science in Physics from University of Kerala, Thiruvananthapuram.


DEPARTMENT OF PHYSICS
SREE NARAYANA COLLEGE, PUNALUR
Mrs. ASIDHA L R

Head of the Department

External Examiners:

1. 
2. 
11/10/2015

SYNTHESIS AND CHARACTERIZATION OF TARTARIC ACID DOPED POLYANILINE



*A project report submitted to the University of Kerala in partial fulfilment of the requirements
for the award of the Degree of master of science in physics from University of Kerala*

ATHUL SAJI

CANDIDATE CODE: 63022133006

UNDER THE SUPERVISION OF

DR. RATHEESH R

(Assistant Professor, Sree Narayana College, Punalur)

DEPARTMENT OF PYSICS

SREE NARAYANA COLLEGE PUNALUR

2022-2024



Department of physics
SREE NARAYANA COLLEGE PUNALUR

CERTIFICATE

This is to certify that the project report entitled "SYNTHESIS AND CHARACTERIZATION OF TARTARIC ACID DOPED POLYANILINE", being submitted to the University of Kerala, in partial fulfilment of the requirement for the award of the MSc degree in Physics, represents a work carried out by the MSc final year student, **ATHUL SAJI** (Candidate code: **63022133006**), Department of Physics, SREE NARAYANA COLLEGE PUNALUR.


MS. ASITHA L.B.
Head, Department of physics

DEPARTMENT OF PHYSICS
SREE NARAYANA COLLEGE PUNALUR

Sree Narayana College Punalur

Signature of Examiners:

1.



2.


1/10/2023

STRUCTURAL AND SPECTROSCOPIC STUDIES OF A NOVEL HETEROGENEOUS NANOCOMPOSITE

*A project report submitted to the University of Kerala in partial fulfilment of the
requirements for the award of the Degree of master of science in physics from University of
Kerala*

ATHULYA SUTHAN

CANDIDATE CODE: 63022133007



UNDER THE SUPERVISION OF

DR. INDULAL. C. R

(Assistant Professor, St. Gregorios College Kottarakkara)

DEPARTMENT OF PHYSICS

SREE NARAYANA COLLEGE PUNALUR

2022-2024



Department of physics

SREE NARAYANA COLLEGE PUNALUR

CERTIFICATE

This is to certify that the project report entitled “STRUCTURAL AND SPECTROSCOPIC STUDIES OF A NOVEL HETEROGENEOUS NANOCOMPOSITE”, being submitted to the University of Kerala, in partial fulfilment of the requirement for the award of the MSc degree in Physics, represents a work carried out by the MSc final year student, ATHULYA SUTHAN (Candidate code: 63022133007), Department of Physics, SREE NARAYANA COLLEGE PUNALUR.


DEPARTMENT OF PHYSICS
SREE NARAYANA COLLEGE, PUNALUR
MS. ASTHA L R

Head, Department of physics

Sree Narayana College Punalur

Signature of Examiners:

1.

2.

THERMOPHYSICAL STUDIES OF A NOVEL NANOFLUID FOR ENGINEERING APPLICATION

A project report submitted to the



University of Kerala

*in partial fulfilment of the requirements for the award of the Degree of master of science in
physics from University of Kerala*

BHANUPRIYA D

CANDIDATE CODE: 63022133008

UNDER THE SUPERVISION OF

DR. INDULAL C R

(Assistant Professor, St. Gregorios College, Kottarakara)

DEPARTMENT OF PHYSICS

SREE NARAYANA COLLEGE PUNALUR

2022-2024



Department of physics

SREE NARAYANA COLLEGE PUNALUR

CERTIFICATE

This is to certify that the project report entitled "THERMOPHYSICAL STUDIES OF A NOVEL NANOFLUID FOR ENGINEERING APPLICATION", being submitted to the University of Kerala, in partial fulfilment of the requirement for the award of the MSc degree in Physics, represents a work carried out by the MSc final year student, BHANUPRIYA D (Candidate code: 63022133008), Department of Physics, SREE NARAYANA COLLEGE PUNALUR.


MS. ASITHA L R
DEPARTMENT OF PHYSICS
SREE NARAYANA COLLEGE PUNALUR

Head, Department of physics

Sree Narayana College Punalur

Signature of Examiners:

1. 

2. 

TREND ANALYSIS OF RAINFALL AND DROUGHT OVER KERALA

A project report submitted to the



University of Kerala

*in partial fulfilment of the requirements for the award of the Degree of master
of science in physics from University of Kerala*

DIVYA R

CANDIDATE CODE: 63022133009

Under the supervision of

DR. INDULAL .C.R

(Assistant Professor, St. Gregorios College Kottarakkara)



POST GRADUATE DEPARTMENT OF PHYSICS

SREE NARAYANA COLLEGE, PUNALUR

2022-2024



POST GRADUATE DEPARTMENT OF PHYSICS

SREE NARAYANA COLLEGE PUNALUR

CERTIFICATE

This is to certify that the project report entitled " TREND ANALYSIS OF RAINFALL AND DROUGHT OVER KERALA ", being submitted to the University of Kerala, in partial fulfilment of the requirement for the award of the MSc degree in Physics, represents a work carried out by the MSc final year student, DIVYA R (Candidate code: 63022133009), Department of Physics, SREE NARAYANA COLLEGE PUNALUR.

DEPARTMENT OF PHYSICS
SREE NARAYANA COLLEGE PUNALUR.

Mrs. ASITHA L.R

(HOD & Assistant Professor)

Sree Narayana College Punalur

Signature of Examiners:

1.

Sadim

2.

P.H.D

STUDIES ON CHRYSIN MEDIATED SYNTHESIS OF Y_2O_3 NANOPARTICLES

A project report submitted to the



University of Kerala

In partial fulfilment of the requirements for the award of the Degree of Master of Science in

Physics from University of Kerala

HARITHA.S.KUMAR

CANDIDATE CODE: 63022133010

UNDER THE SUPERVISION OF

Mr. PRAVEEN K H

(Assistant Professor, Sree Narayana College Punalur)

DEPARTMENT OF PHYSICS

SREE NARAYANA COLLEGE PUNALUR

2022-2024



Department of Physics

SREE NARAYANA COLLEGE, PUNALUR

CERTIFICATE

This is to certify that the project report entitled “STUDIES ON CHRYSIN MEDIATED SYNTHESIS OF Y_2O_3 NANOPARTICLES”, being submitted to the University of Kerala, in partial fulfilment of the requirement for the award of the MSc degree in Physics, represents a work carried out by the MSc Physics final year student, **HARITHA.S.KUMAR** (Candidate code: 63022133010), Department of Physics, SREE NARAYANA COLLEGE PUNALUR.

Mr.PRAVEEN K H

Assistant Professor, Department of Physics

Sree Narayana College Punalur.

Signature of Examiners:

1.

