

# SANATANA DHARMA COLLEGE ALAPPUZHA



AQAR 2021-22

**3.5.1 Number of Collaborative activities for research, Faculty exchange, Student exchange/ internship during the year**



കേരള സംസ്ഥാന ജൈവവൈവിധ്യ ബോർഡ്  
KERALA STATE BIODIVERSITY BOARD



A statutory and autonomous body, Government of Kerala

Kailasam, T.C. 24/3219, No. 43, Belhaven Gardens, Kowdiar P.O.,  
Thiruvananthapuram - 695 003: Phone :0471- 2724740  
Email: kerala.sbb@kerala.gov.in, Website: www.keralabiodiversity.org  
Toll free No: 1800 425 5383

No 3656/ A13/2021/KSBB

03.12.2021

Dear DCs,

Sub: KSBB- Biodiversity studies of selected biodiversity rich areas- Reg  
Ref: No 3656/ A13/2021/KSBB dated 16.11.2021

As per the reference cited certain areas has been selected for conducting Biodiversity monitoring studies (Annexure 1) and an amount of **Rs 25,000/- (Rupees Twenty Five Thousand Only)** site has been allotted. The entire program shall be planned and implemented towards fulfilling the objective of conservation based on scientific biodiversity assessment in participatory mode.

The amount can be utilized for honorarium to the experts, TA and food expenses of the participants, preparation of reports etc. The DCs can adopt the following methods for the studies based on the area and availability of personnel.

1. The study can be done with the help of TSG members/ nearby college teachers/ institutes etc
2. Nature camps/ River walk/ Butterfly survey/ Bird watching etc with the involvement of Biodiversity clubs/ students/ college students
3. With the help of Citizen scientists

Wide publicity shall be given to the programs in the District and involvement of BMC and other stakeholders shall be ensured. It shall be noted that experts in the field of flora/ fauna/ ecology shall be included in the group as needed. A soft copy of the detailed report including methodology adopted, details of species, biodiversity indices including Simpson's Index and photographs shall be submitted to the Board. The amount shall be utilized during the current financial year (before March 2022) and Utilization Certificate along with a soft copy of the report submitted.

Yours faithfully

**Dr.C.George Thomas**  
**Chairman**

**List of Biodiversity rich areas identified by DCs**

<b>SL.No</b>	<b>District</b>	<b>Site</b>	<b>Nature</b>
1	Thiruvananthapuram	1. Parayathukonam Chira, Kizhuvilam Panchayath 2. Punchachira- Valakam Wetland area, Kizhuvilam panchayath 3. Pazhamchirakulam, Chirayinkeezhu Panchayath 4. Kadinamkulam lake, Kadinamkulam panchayath 5. Kondaketti Kunichi hills, Vellarada Panchayath 6. Karichal lake and mangrove area at Kottukal, Kanjiramkulam and Karumkulam Panchayaths	pond  Wetland  Pond  Lake  Hills  lake
2	Alappuzha	1. Perumbalam island (North east area of Alappuzha district) 2. Pallipuram Mangrove patch (Pallipuram- Thykkattussery-Arookuutty area)	Island  Mangrove forest
3	Ernakulam	1. Ponnakudam Kavu, Kalamassery Municipality	Kavu
4	Palakkad	1. Ramassery Heritage Hill	Hill
5	Kottayam	1. Thaevarmala, Bharananganam Gp 2. Kallara-Mudakkali area and Kallukadavu area, Kallara Gp	Hill  Wetland



BIODIVERSITY ASSESSMENT OF  
PALLIPPURAM MANGROVE  
REGIONS OF ALAPPUZHA

**KERALA STATE BIODIVERSITY BOARD**

**BIODIVERSITY ASSESSMENT OF  
PALLIPPURAM MANGROVE REGIONS OF  
ALAPPUZHA**

**BIODIVERSITY STUDIES OF SELECTED  
BIODIVERSITY RICH AREAS**

**DISTRICT: ALAPPUZHA**

**NO. 3656/A13/2021/KSBB DATED 16.11.2021**

**TECHNICAL REPORT**

**SUBMITTED BY  
DISTRICT COORDINATOR  
KERALA STATE BIODIVERSITY BOARD, ALAPPUZHA**

### **Expert Committee**

- 1. Dr. Jose Mathew** : Assistant Professor, Department of Botany, SD College, Alappuzha
- 2. Dr. G. Nagendra Prabhu** : Professor, Department of Zoology, SD College, Alappuzha.
- 3. Dr. Sary P.S.** : Senior Research Fellow, Fishery Resources Assessment, Economics & Extension Division, CMFRI, Kochi



**KERALA STATE  
UNIVERSITY BOARD**

**കണ്ടൽ സസ്യ ജൈവവൈവിധ്യ പഠനം**

തിയതി: 26.03.2022  
സമയം: 02.00 pm

സ്ഥലം: N.S.S. കരയോഗം ഹാൾ തൈക്കാട്ടുശ്ശേരി

കേരള സംസ്ഥാന ജൈവവൈവിധ്യ ബോർഡ്  
തൈക്കാട്ടുശ്ശേരി, ചേന്നം പള്ളിപ്പുറം ഗ്രാമപഞ്ചായത്ത്  
ജൈവവൈവിധ്യ പരിപാലന സമിതികൾ  
കണ്ടൽക്കാടുകളുടെ പ്രാധാന്യം പഠനക്ലാസും സർവ്വേയും  
ഡോ. ജോസ് മാത്യു SD കോളേജ്, അശോകൻ മാഷ് ANHS  
എന്നിവർ ക്ലാസ്സ് എടുക്കുന്നു.



## കണ്ടൽക്കാടുകളെക്കുറിച്ചു പഠനംതുടങ്ങി

**വുച്ചാക്കൽ** - തൈക്കാട്ടുശ്ശേരി, ചേന്നംപള്ളിപ്പുറം പഞ്ചായത്ത് പ്രദേശങ്ങളിലെ കണ്ടൽക്കാടുകളെക്കുറിച്ചു പഠനം തുടങ്ങി. കേരള സംസ്ഥാന ജൈവവൈവിധ്യ ബോർഡ്, പഞ്ചായത്ത് ജൈവവൈവിധ്യ പരിപാലനസമിതിയുമായി ചേർന്നാണ് പഠനം നടത്തുന്നത്.

നിലവിലുള്ള കണ്ടൽമരങ്ങളുടെ എണ്ണം, കൂടുതൽ സ്ഥലങ്ങളിൽ ഇവ നട്ടുപിടിപ്പിക്കേണ്ടതിന്റെ ആവശ്യകത തുടങ്ങിയ കാര്യങ്ങൾ പഠനവിഷയമാക്കും. പഠനത്തിനു മുന്നോടിയായി തൈക്കാട്ടുശ്ശേരിയിൽ ബോധവൽക്കരണ പരിപാടി നടത്തി.

പഞ്ചായത്ത് പ്രസിഡൻ്റ് ഡി. വിശ്വരേഖ ഉദ്ഘാടനം ചെയ്തു. പള്ളിപ്പുറം പഞ്ചായത്ത് പ്രസിഡൻ്റ് ടി.എസ്. സുധീഷ് അധ്യ



കണ്ടൽക്കാടുകളെക്കുറിച്ചുള്ള പഠനത്തിനു മുന്നോടിയായി തൈക്കാട്ടുശ്ശേരിയിൽ നടത്തിയ ബോധവൽക്കരണ പരിപാടി പഞ്ചായത്ത് പ്രസിഡൻ്റ് ഡി. വിശ്വരേഖ ഉദ്ഘാടനം ചെയ്യുന്നു

ക്ഷനായി. ആലപ്പുഴ എസ്.ഡി. കോളേജ് സസ്യശാസ്ത്രവിഭാഗം അസിസ്റ്റൻ്റ് പ്രൊഫസർ ഡോ. ജോസ് മാത്യു 'കണ്ടൽക്കാടുകളുടെ പരിസ്ഥിതികപ്രാധാന്യം' എന്ന വിഷയത്തിൽ ക്ലാസെടുത്തു. ജില്ലാ കോ-ഓർഡിനേറ്റർ ടി.ജി. ചന്ദ്രപ്രകാശ്, ബി.എം.സി. അംഗം പി. ബാലചന്ദ്രൻ എന്നിവർ പ്രസംഗിച്ചു. കണ്ടൽസസ്യ സർവ്വേ നടത്തി.

**Plate 1: Biodiversity awareness program and training conducted**

**DIARYL ETHENE AND ITS DONOR  
SUBSTITUTED DERIVATIVES FOR DRUG  
DELIVERY- A COMPUTATIONAL STUDY**

A dissertation submitted to University of Kerala for the partial fulfilment  
of the award of

*DEGREE OF MASTER OF SCIENCE*

*IN*

*CHEMISTRY*

*BY*



**ROHITH P**

**(Reg No. 63520125014)**

**Examination code:-63520401**

**Dissertation code:-CH 243 ( a )**

*Project work carried out under the guidance of*

**Mr ARAVIND K.**



DEPARTMENT OF CHEMISTRY

SB COLLEGE, CHANGANACHERRY



**ST.BERCHMANS COLLEGE**

**(Autonomous)**

**Changanacherry, Kerala**

**DEPARTMENT OF CHEMISTRY**

**CERTIFICATE**

This is to certify that the project entitled “*DIARYL ETHENE AND ITS DONOR SUBSTITUTED DERIVATIVES FOR DRUG DELIVERY - A COMPUTATIONAL STUDY*” is a bonafide work carried out by **ROHITH P (Reg no. 63520125014)** under the guidance of me for partial fulfilment of the requirement for the award of Degree of Master of Science in Chemistry of University of Kerala during the year 2020-2022. This project report is the original work and has not been previously submitted for the award of any degree, diploma, fellowship, or other similarities.

Date : 29/08/2022

*Changanacherry*

**Mr Aravind K**

*Assistant Professor*

*Department of Chemistry*

*S B College, Changanacherry*



**PG AND RESEARCH DEPARTMENT OF CHEMISTRY  
SANATANA DHARMA COLLEGE  
SANATHANAPURAM P.O ALAPPUZHA 688003 KERALA  
(NAAC Re-Accredited Grade 'A+' College affiliated to University of  
Kerala)**

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Date:29/08/2022

Alappuzha

**Supervising teacher**

**Dr. P. GIRIJA**

Associate Professor

Department of Chemistry

Sanatana Dharma College

Alappuzha



**PG AND RESEARCH DEPARTMENT OF CHEMISTRY  
SANATANA DHARMA COLLEGE  
SANATHANAPURAM P.O ALAPPUZHA 688003 KERALA  
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This is to certify that the project entitled “*DIARYL ETHENE AND ITS DONOR SUBSTITUTED DERIVATIVES FOR DRUG DELIVERY - A COMPUTATIONAL STUDY*” is a bonafide work carried out by **ROHITH P (Reg no. 63520125014)** under the guidance of Mr Aravind K, Assistant Professor, Department of chemistry, St.Berchmans College, Changanacherry for partial fulfilment of the requirement for the award of Degree of Master of Science in Chemistry of University of Kerala during the year 2020-2022. This project report is the original work and has not been previously submitted for the award of any degree, diploma, fellowship, or other similarities.

Date:29/08/2022

Alappuzha

**Prof.(Dr.) K H PREMA**

Head of the Department

Department of Chemistry

Sanatana Dharma College

Alappuzha

## **DECLARATION**

I Rohith P hereby declare that this project work entitled ***“DIARYL ETHENE AND ITS DONOR SUBSTITUTED DERIVATIVES FOR DRUG DELIVERY -A COMPUTATIONAL STUDY”*** has been prepared by me towards the partial fulfilment of the requirement for the award of Degree of Master of Science in Chemistry under the supervision and guidance of **Mr Aravind K**, Assistant Professor, Department of Chemistry, SB College, Changanacherry. I also declare that this project report is my original work and has not been previously submitted for the award of any degree, diploma, fellowship or other similarities.

**ROHITH P**

Reg. No: 63520125014

Sanatana Dharma College

Alappuzha



# **DIARYL ETHENE AND ITS ACCEPTOR SUBSTITUTED DERIVATIVES FOR DRUG DELIVERY- A COMPUTATIONAL STUDY**

A dissertation submitted to University of Kerala for the partial fulfilment  
of the award of

*DEGREE OF MASTER OF SCIENCE*

*IN*

*CHEMISTRY*

*By*



**SARASWATHI S KUMAR**

**(Reg No. 63520125015)**

**Examination code:-63520401**

**Dissertation code:-CH 243 (a)**

*Project work carried out under the guidance of*

**Mr ARAVIND K.**



**DEPARTMENT OF CHEMISTRY**

**SB COLLEGE, CHANGANACHERRY**



**ST.BERCHMANS COLLEGE**  
**(Autonomous)**  
**Changanacherry, Kerala**  
**DEPARTMENT OF CHEMISTRY**

**CERTIFICATE**

This is to certify that the project entitled “***DIARYL ETHENE AND ITS ACCEPTOR SUBSTITUTED DERIVATIVES FOR DRUG DELIVERY- A COMPUTATIONAL STUDY***” is a bonafide work carried out by **SARASWATHI S KUMAR (Reg no. 63520125015)** under guidance of me for partial fulfilment of the requirement for the award of Degree of Master of Science in Chemistry of University of Kerala during the year 2020-2022. This project report is the original work and has not been previously submitted for the award of any degree, diploma, fellowship or other similarities.

Date : 29 /08/2022

*Changanacherry*

**Mr Aravind K**

*Assistant Professor*

*Department of Chemistry*

*S B College, Changanacherry*



**PG AND RESEARCH DEPARTMENT OF CHEMISTRY  
SANATANA DHARMA COLLEGE  
SANATHANAPURAM P.O ALAPPUZHA 688003 KERALA  
(NAAC Re-Accredited Grade 'A+' College affiliated to University of  
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Date:29/08/2022

Alappuzha

**Supervising teacher**

**Dr. P. GIRIJA**

Associate Professor

Department of Chemistry  
Sanatana Dharma College  
Alappuzha



**PG AND RESEARCH DEPARTMENT OF CHEMISTRY  
SANATANA DHARMA COLLEGE  
SANATHANAPURAM P.O ALAPPUZHA 688003 KERALA  
(NAAC Re-Accredited Grade 'A+' College affiliated to University of Kerala)**

**CERTIFICATE**

This is to certify that the project entitled ***“DIARYL ETHENE AND ITS ACCEPTOR SUBSTITUTED DERIVATIVES FOR DRUG DELIVERY- A COMPUTATIONAL STUDY”*** is a bonafide work carried out by **SARASWATHI S KUMAR (Reg no. 63520125015)** under guidance of Mr Aravind K, Assistant Professor , Department Of Chemistry , St.Berchmans College, Changanacherry for partial fulfilment of the requirement for the award of Degree of Master of Science in Chemistry of University of Kerala during the year 2020-2022.This project report is the original work and has not been previously submitted for the award of any degree, diploma, fellowship or other similarities.

Date:29/08/2022  
Alappuzha

**Prof.(Dr.) K H PREMA**  
Head of the Department  
Department of Chemistry  
Sanatana Dharma College  
Alappuzha

## **DECLARATION**

I SARASWATHI S KUMAR hereby declare that this project work entitled ***“DIARYL ETHENE AND ITS ACCEPTOR SUBSTITUTED DERIVATIVES FOR DRUG DELIVERY- A COMPUTATIONAL STUDY”*** has been prepared by me towards the partial fulfilment of the requirement for the award of Degree of Master of Science in Chemistry under the supervision and guidance of **Mr Aravind K**, Assistant Professor, Department of Chemistry, SB College, Changanacherry. I also declare that this project report is my original work and has not been previously submitted for the award of any degree, diploma, fellowship or other similarities.

**SARASWATHI S KUMAR**

Reg. No: 63520125015

Sanatana Dharma College

Alappuzh



# **Synthesis and Characterization of Glycidyl Methacrylate Cross-linked Hyaluronic Acid Grafted Mesoporous Silica Nanoparticle for the Delivery of Doxorubicin**

*Dissertation Submitted to the University of Kerala  
in Partial Fulfilment of the Requirements for the Award of  
Degree of Master of Science in Chemistry*

*By*

**NANDITHA .P. KUMAR**

**(Candidate code: 63520125012)**



**Post-Graduate Department of Chemistry  
Sanatana Dharma College, Alappuzha, University of Kerala**

**Under the Supervision of**



**Prof. (Dr.) T. S. ANIRUDHAN**

Emeritus Professor

*Department of Chemistry*

*School of Physical and Mathematical of Sciences*

*University of Kerala, Kariavattom, Thiruvananthapuram*

**2020-2022**



**PG DEPARTMENT OF CHEMISTRY**

**SANATANA DHARMA COLLEGE**

**SANATHANAPURAM P.O ALAPPUZHA 688003 KERALA**

**(NAAC Re-Accredited Grade 'A+' College affiliated to University of Kerala)**

## **CERTIFICATE**

This is to certify that the project entitled “**Synthesis and Characterization of Glycidyl Methacrylate Cross-linked Hyaluronic Acid Grafted Mesoporous Silica Nanoparticle for the Delivery of Doxorubicin**” is a bonafide record of the research work carried out by **Ms. Nanditha. P. Kumar (Reg no. 63520125012)** for partial fulfillment of the requirement for the award of Degree of Master of Science in Chemistry of Kerala University during the year 2020-2022. This project report is the original work and has not been previously submitted for the award of any degree, diploma, fellowship or other similarities.

**29<sup>th</sup> August 2022**

**Co-supervising teacher**

**Dr. CHITHRA SEKHAR V.**



**PG DEPARTMENT OF CHEMISTRY**

**SANATANA DHARMA COLLEGE**

**SANATHANAPURAM P.O ALAPPUZHA 688003 KERALA**

**(NAAC Re-Accredited Grade 'A+' College affiliated to University of Kerala)**

## **CERTIFICATE**

This is to certify that the project entitled “**Synthesis and Characterization of Glycidyl Methacrylate Cross-linked Hyaluronic Acid Grafted Mesoporous Silica Nanoparticle for the Delivery of Doxorubicin**” is a bonafide record of the research work carried out by **Ms. Nanditha P. Kumar (Reg no. 63520125012)** for partial fulfillment of the requirement for the award of Degree of Master of Science in Chemistry of Kerala University during the year 2020-2022. This project report is the original work and has not been previously submitted for the award of any degree, diploma, fellowship or other similarities.

**29<sup>th</sup> August 2022**

**Head of the Department**

**Dr. K. H. Prema**

## **DECLARATION**

I hereby declare that the dissertation entitled “**Synthesis and Characterization of Glycidyl Methacrylate Cross-linked Hyaluronic Acid Grafted Mesoporous Silica Nanoparticle for the Delivery of Doxorubicin**” is the original research work carried out by me under the supervision and guidance of **Prof. (Dr.) T. S. Anirudhan**, Emeritus Professor, School of Physical and Mathematical Sciences, Department of Chemistry, University of Kerala, Kariavattom, and Co-supervision of **Dr.V. Chithra Sekhar**, Assistant Professor, Department of Chemistry Sanatana Dharma College Alappuzhain the partial fulfillment of the requirements for the award of **Master of Science in Chemistry**.

**Thiruvananthapuram**

**29<sup>th</sup> August 2022**

**Nanditha P. Kumar**

## **ACKNOWLEDGEMENTS**

*I submit this work to the grace of **God Almighty**, for blessing me with health, confidence and knowledge to carry out the whole work successfully.*

*I express my sincere gratitude to my supervising teacher, **Prof. (Dr.) T. S. Anirudhan**, Emeritus Professor, School of Physical and Mathematical Sciences, Department of Chemistry, University of Kerala for giving me an opportunity to carry out this dissertation work. I express my heartfelt gratitude to him for his valuable guidance, healthy criticisms, intellectual suggestions and continuous support for fortifying and enriching my knowledge on this topic and also for granting all necessary infrastructural support and encouragement needed for the work.*

*I express my sincere gratitude to **Dr. C. V. Suneesh**, Head of the Department of Chemistry for providing me the opportunity to do this work in the Department of Chemistry, University of Kerala, Kariavattom Campus.*

*I express my sincere gratitude to **Dr. V. Chithra Sekhar**, Assistant Professor, Department of Chemistry, S. D. College, Alappuzha for providing the facilities and suggestions to carry out my work. I extend my thanks to **Dr. K. H. Prema**, Head of the Department of Chemistry, S. D. College, Alappuzha for providing facilities and support for the work. I would also like to express my gratitude to all other teaching and nonteaching staff in this department for their help and advice to complete this project.*

*I lovingly acknowledge my sincere gratitude to **Mr. M. R. Rajeev**, Research Scholar, Department of Chemistry, University of Kerala for providing me the scientific and kind attention with full support for the completion of this work. I would also like to express thanks for all help and support of Dr. L. R. Reshma, Mrs. V. Manjusha, Ms. Athira Mani, Ms. G. S. Lekshmi, Mrs. R. Suriya, Ms. B. K. Arathy and for co-operation and help for enabling me to complete the work. I extend my heartfelt thanks to all my classmates, M. Phil Students, and research scholars of this department. I express my sincere gratitude to my friends and family for their constant encouragement and support.*

**NANDITHA P. KUMAR**

Padmanabhan Pillai and Company MOU (2021)

Padmanabhan Pillai and Company MOU (2021)

Internship 2021

	Candidate Name	Job Role	QP Code	Nature of activity	Date of activity (internship)
1	Meera Nataraj	Goods & Service Tax Accounts Assistant	BSC/Q0910	Internship ,30 days	30 days , August 2021
2	Abhishek S	Goods & Service Tax Accounts Assistant	BSC/Q0910	Internship ,30 days	30 days , August 2021
3	Remya Chandran	Goods & Service Tax Accounts Assistant	BSC/Q0910	Internship ,30 days	30 days , August 2021
4	Mohammad Sajad	Goods & Service Tax Accounts Assistant	BSC/Q0910	Internship ,30 days	30 days ,August 2021
5	Harikrishnan S	Goods & Service Tax Accounts Assistant	BSC/Q0910	Internship ,30 days	30 days , August 2021
6	Madhav.S	Goods & Service Tax Accounts Assistant	BSC/Q0910	Internship ,30 days	30 days , August 2021
7	Sreereshmi P S	Goods & Service Tax Accounts Assistant	BSC/Q0910	Internship ,30 days	30 days ,August 2021
8	Ramya. R	Goods & Service Tax Accounts Assistant	BSC/Q0910	Internship ,30 days	30 days , August 2021
9	Sharon Fernandez	Goods & Service Tax Accounts Assistant	BSC/Q0910	Internship ,30 days	30 days , August 2021

# University of Kerala

(Established as University of Travancore by the Travancore University Act in 1937 and reconstituted as University of Kerala by the Kerala University Act of 1957 and presently governed by the Kerala University Act of 1974 passed by the Kerala Legislative Assembly)  
Re-accredited by NAAC with "A" Grade

DEPARTMENT OF PHYSICS  
Kariavattom  
Thiruvananthapuram-695581  
Kerala, India  
Telephone: 0471-2308920

Date: 06.11.2021

.....  
Dr. R. Jayakrishnan  
Associate Professor

## Letter of Collaboration


I am happy to certify that Dr. Sreekanth J Varma, Assistant Professor, Department of Physics, SD College, Allapuzha has been collaborating with my research activities on "Development of Lead free perovskite Solar cells". Joint R&D activities have been conducted based on which journal publications have been made. A PhD student is conducting doctoral studies under the faculty members and the period of PhD registration is from 2017-2022.

Certified that the collaboration involves no financial commitment to either of the faculty members.

This letter is being issued for the purpose of NAAC SSR preparation of SD College Allapuzha.

Place: KARIAVATTOM

Date: 06-11-2021

  
Dr. R. JAYAKRISHNAN  
Associate Professor  
Department of Physics  
University of Kerala  
Thiruvananthapuram - 695581

Jayesh Cherusseri  
Advanced Fiber Energy Devices Laboratory,  
Research & Development Division,  
JC Puli Energy Private Limited,  
Koduvayur, Palakkad, Kerala-678501, India

19 April 2021

Dear Dr. Jayesh Cherusseri,

**APPOINTMENT AS AN FYP EXTERNAL CO-SUPERVISOR**

We are pleased to appoint you as the External Co-Supervisor of the following Post-Graduate Project candidate at Sanatana Dharma College, Alappuzha affiliated to the University of Kerala because of your expertise in the field of research:

<b>Name of Candidate</b>	Midhun Thomas (Reg.No. 63020125010)
<b>Department/ Faculty</b>	Department of Physics
<b>Programme</b>	Master of Science (MSc) in Physics
<b>Other member of Panel of Supervisor(s)</b>	Asst. Prof. Dr. Sreekanth J. Varma

Your appointment will commence on 1 April 2021 for one year (till 31 March 2022) or until the completion of his/her study, unless otherwise terminated by the Programme Coordinator of the Department of Physics, Sanatana Dharma College on an earlier date.

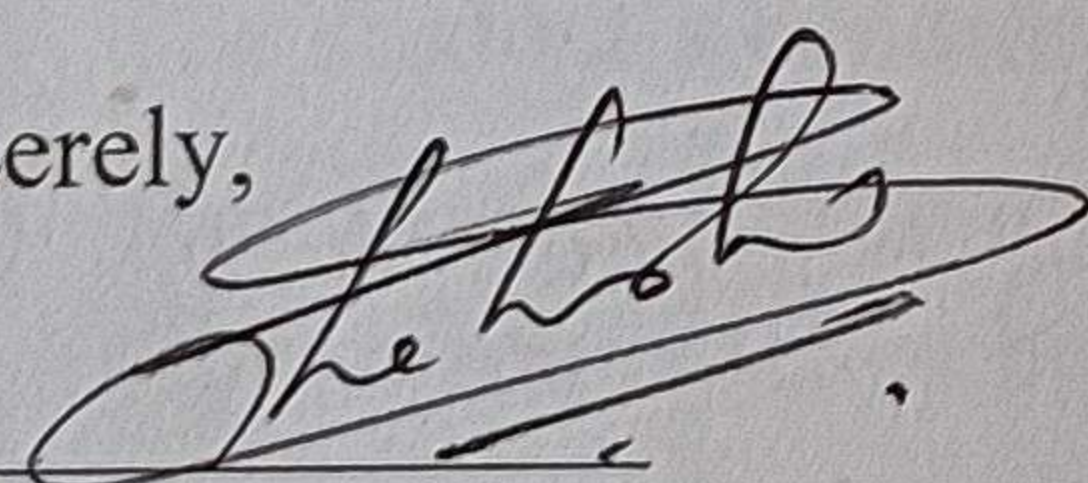
The appointment is not entitled to any remuneration. Your duties and responsibilities as a Co-Supervisor are stated in the Terms and Conditions section of this document.

Please kindly confirm your acceptance by signing and returning to us the duplicate copy of this appointment letter within seven days from the date hereof.

We are looking forward to your active involvement in our postgraduate programme through this appointment.

Thank you.

Yours sincerely,



Dr. S Lekshmi  
Associate Professor and Head of the Department  
Post Graduate and Research Department of Physics  
Sanatana Dharma College, Alappuzha  
(Affiliated to University of Kerala, Kerala, India)

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**ACKNOWLEDGEMENT OF ACCEPTANCE**

I, Jayesh Cherusseri, with Passport No. Z4464682 (Republic of India), do accept the above terms and conditions of my appointment as stated herein.

\_\_\_\_\_  
Date:

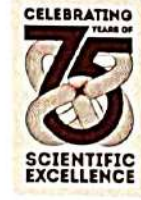


# रामन अनुसंधान संस्थान

सी. वी. रामन एवेन्यू, सदाशिवनगर, बेंगलूरु - 560 080, भारत  
(स्वायत्त संस्थान, विज्ञान और प्रौद्योगिकी विभाग, भारत सरकार)

## RAMAN RESEARCH INSTITUTE

C. V. Raman Avenue, Sadashivanagar, Bengaluru - 560 080, India  
(Autonomous Institute, Department of Science and Technology, Government of India)



04.05.2023

**Dr. Reji Philip**  
**Professor**

I am happy to certify that Dr. Sreekanth J. Varma, Assistant Professor, Department of Physics and Research Centre, SD College, Alappuzha has been collaborating with my research activities on "Nonlinear optical studies of Nano Materials and Organic Molecules" from January 2022. This collaboration is set to continue for the next two years. Joint R&D activities have been conducted based on which journal publications have been made. Currently, his two MSc students are doing part of their research work in my lab for their Master's thesis.

Certified that the collaboration involves no financial commitment to either of the faculty members.

Reji Philip

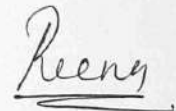
Dr. Mary Reena Jacob  
Managing Director

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TC 94/1550, EMS Nagar (KSHB)  
Near Block No. 1, Pattoor, Vanchiyoor P.O  
Trivandrum-695035, Kerala, India  
E-mail: biosresearchcentre@gmail.com

**CERTIFICATE**

This is to certify that dissertation entitled "MOLECULAR AND PROTEIN ANALYSIS OF PENAEUS MONODON COLLECTED FROM KERALA AND TAMIL NADU" is an authentic work carried out by **ABHIRAMI SREEKUMAR** at Molecular Bios Pvt Ltd, Thiruvananthapuram in partial fulfilment of the award of the Master of Science in Zoology by the University of Kerala and that No part of this work has been submitted for the award of any degree or diploma.

Managing Director



Dr. Mary Reena Jacob



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Managing Director

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**CERTIFICATE**

This is to certify that dissertation entitled "MOLECULAR DIAGNOSIS OF CASSAVA LEAVES AND ITS PROTEIN ANALYSIS COLLECTED FROM DIFFERENT PLACES IN KERALA" is an authentic work carried out by **ASWANI R** at Molecular Bios Pvt Ltd, Thiruvananthapuram in partial fulfilment of the award of the Master of Science in Zoology by the University of Kerala and that No part of this work has been submitted for the award of any degree or diploma.

Managing Director



Dr. Mary Reena Jacob



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Trivandrum-695035, Kerala, India  
E-mail: biosresearchcentre@gmail.com

**CERTIFICATE**

This is to certify that dissertation entitled "MORPHOLOGICAL, MOLECULAR IDENTIFICATION AND PHYTOCHEMICAL ANALYSIS OF FUNGI ISOLATED FROM DIFFERENT BRANDS OF BREAD" is an authentic work carried out by **MARIYA TOMY** at Molecular Bios Pvt Ltd, Thiruvananthapuram in partial fulfilment of the award of the Master of Science in Zoology by the University of Kerala and that No part of this work has been submitted for the award of any degree or diploma.

Managing Director



Dr. Mary Reena Jacob

