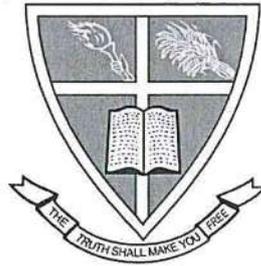


UNION CHRISTIAN COLLEGE



CERTIFICATE

This is to certify that the project entitled “**Liquid Phase Exfoliation of Graphene and its Characterisation**” is a bonafide work done by the candidate SHILPA MARIAM SAMUEL(Reg No:190011019397) under my guidance and supervision at the Research centre of Department of Physics, U C College, Aluva, and this project was carried out in partial fulfilment of the requirement for the award of the degree of Master of Science in Physics.

A handwritten signature in blue ink, consisting of a large, stylized initial 'S' followed by a horizontal line that extends to the right and then loops back under the 'S'.

Dr. Shinoj V K

Assistant Professor

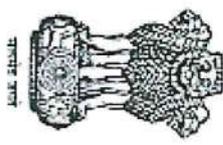
Department of Physics

Union Christian College, Aluva

भारत सरकार
अंतरिक्ष विभाग

विक्रम साराभाई अंतरिक्ष केन्द्र

विद्यमानपुरम-695 022
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Vikram Sarabhai Space Centre
Thiruvananthapuram-695 022

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लागू/Gram: SPACE

ईमेल/e-mail:kk_sobhan@vssc.gov.in

Space Physics Laboratory

Certificate

This is to certify that this project report entitled "A study on characterization of aerosol black carbon using laser induced incandescence technique" submitted by Ms. Aiswarya PK for the partial fulfillment of the requirement for the award of the Degree of Master of Science in Physics has been successfully carried out at the Space Physics Laboratory, Vikram Sarabhai Space Centre, Thiruvananthapuram.

I express my hearty best wishes for her success in life.

Sobhan Kumar Kompalli
Scientist-SE,
SPL, VSSC
Thiruvananthapuram

CERTIFICATE

This is to certify that the dissertation entitled "SPRAY DEPOSITED Ga₂O₃ THIN FILMS FOR UV DETECTOR APPLICATIONS" is a record of original work carried out by ASWATHY R NAIR under my supervision and guidance during 2019-2021 in the partial fulfilment of the requirement for the award of degree Master of Science in Physics under Mahatma Gandhi University, Kottayam.



Ms. Rakshy Raphael
Assistant Professor,
Department of Physics
Union Christian College, Aluva

CERTIFICATE

This is to certify that the dissertation entitled "SPRAY DEPOSITED Ga₂O₃ THIN FILMS FOR UV DETECTOR APPLICATIONS" is a record of original work carried out by BISSYMOL T THOMAS under my supervision and guidance during 2019-2021 in the partial fulfillment of the requirement for the award of degree Master of Science in Physics under Mahatma Gandhi University, Kottayam.


Ms. Rakhy Raphael
Assistant Professor,
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CERTIFICATE

This is to certify that the dissertation entitled "SPRAY DEPOSITED Ga₂O₃ THIN FILMS FOR UV DETECTOR APPLICATIONS" is a record of original work carried out by SALAHUNEESA T A under my supervision and guidance during 2019-2021 in the partial fulfilment of the requirement for the award of degree Master of Science in Physics under Mahatma Gandhi University, Kottayam.



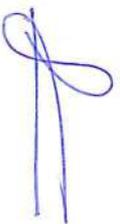
Ms. Rakhy Raphael
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This is to certify that the project entitled "A study on similarity score in fingerprint analysis using Matlab for biometric applications" is a bonafide work done by the candidate RIVA ROSE CHERIAN (190011019394) under my guidance and supervision at the Research centre of Department of Physics, U C College, Aluva, and this project was carried out in partial fulfillment of the requirement for the award of the degree of Master of Science in Physics.

Dr. Shinoj V.K.


Department of Physics

Union Christian College, Aluva

CHARACTERIZATION OF RARE EARTH DOPED NANOCRYSTALS

*A project report submitted to the Mahatma Gandhi University
in partial fulfillment of the requirements for the
award of the degree Master of Science in Physics.*



Submitted By

**DONNA SUSAN ABRAHAM
UNION CHRISTIAN COLLEGE
ALUVA**

Under the Guidance of
DR. SAJEEV U.S
Assistant Professor
Department of Physics
Government College Kottayam

AUGUST 2021

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CERTIFICATE

This is to certify that the project entitled "Cesium Titanium (IV) Bromide Thin Films Based Stable Lead-Free Perovskites" is a bonafide work done by the candidate SACHIN S (190011019395) under my guidance and supervision at the Research centre of Department of Physics, U C College, Aluva, and this project was carried out in partial fulfillment of the requirement for the award of the degree of Master of Science in Physics.

Dr. Alex Mathew

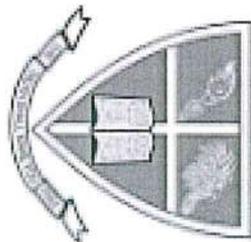
A handwritten signature in black ink, appearing to read "Alex Mathew", is written over a horizontal line.

Head of the Department

Department of Physics

Union Christian College, Aluva

UNION CHRISTIAN COLLEGE



CERTIFICATE

This is to certify that the project entitled "Cesium Titanium (IV) Bromide Thin Films Based Stable Lead-Free Perovskites" is a bonafide work done by the candidate SOURAV K (190011019398) under my guidance and supervision at the Research centre of Department of Physics, U C College, Aluva, and this project was carried out in partial fulfillment of the requirement for the award of the degree of Master of Science in Physics.

Dr. Alex Mathew

A handwritten signature in black ink, appearing to read "Alex Mathew", is written over a horizontal line.

Head of the Department

Department of Physics

Union Christian College, Aluva

Union Christian College, Aluva

DEPARTMENT OF PHYSICS



CERTIFICATE

This is to certify that this project report entitled 'A study on characterization of aerosol black carbon using laser induced incandescence technique' is a bonafide record of the work done by Ms. Aiswarya PK for the partial fulfillment of the requirement for the award of the Degree of Master of Science in Physics under the Mahatma Gandhi University.

Dr. Alex Mathew
Head of the Department
Department of Physics
Union Christian College,
Aluva

UNION CHRISTIAN COLLEGE



CERTIFICATE

This is to certify that the project entitled "PREPARATION AND CHARACTERIZATION OF HEMALITE AND SODIUM DOPED HEMALITE NANOSTRUCTURES" is a bonafide work done by the candidate FEBIYA RAJ DILEEP (19001109392) under my guidance and supervision at the Research centre of Department of Physics, U C college, Aluva and this project was carried out in partial fulfillment of the requirement for the award of the degree of Master of Science in Physics.


Dr. Rachel Raena Philip

Associate Professor

Department of Physics

Union Christian College, Aluva

UNION CHRISTIAN COLLEGE
ALUVA



Project Report on

QUADRUPOLE MOMENT OF CONTINUES
CHARGE DISTRIBUTIONS

*Submitted in partial fulfillment
Of the requirements for the award of degree of*

MASTER OF SCIENCE
IN
PHYSICS
under

MAHATHMA GANDHI UNIVERSITY, KOTTAYAM
KERALA

By

ANU SANTHOSH
Reg No: 190011019387
Under the guidance of

Dr. PRAMOD DOMINIC
ASSISTANT PROFESSOR, DEPARTMENT OF PHYSICS
UNION CHRISTIAN COLLEGE ALUVA

A handwritten signature in black ink, appearing to be 'Anu Santhosh', written over a horizontal line.

CERTIFICATE

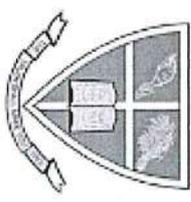
This is to certify that this project report entitled "REVIEW OF ENTROPY AND AREA" being submitted by STONU ALEX of Union Christian College, Aluva, M.G. University, in partial fulfillment for the award of the degree of Master of Science, is a bona fide record of the work carried out by her at Union Christian College, Aluva under my guidance and supervision.



DR. PRAMOD DOMINIC
ASSOCIATE PROFESSOR
DEPARTMENT OF PHYSICS
U. C. COLLEGE, ALUVA

ALUVA
10/03/2020

UNION CHRISTIAN COLLEGE



CERTIFICATE

This is to certify that the project entitled "Synthesis and characterisation of Mn-doped MoS₂" is a bonafide work done by the candidate
GOKUL R(190011019393) under my guidance and supervision at the Research Centre of Department of Physics, U C College, Aluva, and this project was carried out in partial fulfilment of the requirement for the award of the degree of Master of Science in Physics.

Dr Rashmi R



Assistant Professor

Department of Physics

Union Christian College, Aluva

UNION CHRISTIAN COLLEGE



CERTIFICATE

This is to certify that the project entitled "Synthesis and characterisation of Mn-doped MoS₂" is a bonafide work done by the candidate ANAKHA ANNA JOBY (190011019386) under my guidance and supervision at the Research Centre of Department of Physics, U C College, Aluva, and this project was carried out in partial fulfilment of the requirement for the award of the degree of Master of Science in Physics.

Dr Reshmi R

Assistant Professor

A handwritten signature in black ink, appearing to read 'Reshmi R', is written over a horizontal line.

Department of Physics

Union Christian College, Aluva

UNION CHRISTIAN COLLEGE, ALUVA

DEPARTMENT OF ECONOMICS



CERTIFICATE

This is to certify that the dissertation entitled “**A STUDY ON THE IMPACT OF COVID-19 ON ELEMENTARY EDUCATION**” is a bonafide record of the project work carried out by **IRIN AGNES D ALMEIDA** (190011000951) in partial fulfilment of the requirement for the award of the degree of Master of Arts in Economics, at the Department of Economics, Union Christian College Aluva, under my guidance and submitted to Mahatma Gandhi University, Kottayam during the year 2021. The project has been done with prior approval from the Department.

Countersigned by

DR.SUNIL ABRAHAM THOMAS

Dr. Sunil Abraham Thomas
Head of the Department
Department of Economics
Union Christian College
Aluva - 2

U.C College, Aluva

Place: Aluva

Supervising Teacher

Ms. RAJALAKSHMI R

Faculty Guide

Department of Economics

U.C College, Aluva



UNION CHRISTIAN COLLEGE, ALUVA



CERTIFICATE

This is to certify that the dissertation "*A COMPARATIVE STUDY ON PERCEPTION TOWARDS RATION SHOPS IN APL FAMILY: BEFORE AND DURING COVID 19*" is a bona fide record of the project work carried out by **Binny Varghese** in partial fulfilment for the award of the Degree of Master in Arts in Economics of Mahatma Gandhi University, Kottayam during the year 2021.

Dr. Sunil Abraham Thomas

Dr. Sunil Abraham Thomas
Head, Department of Economics
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Ms. Liji Lawrence

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UNION CHRISTIAN COLLEGE,ALUVA



CERTIFICATE

This is to certify that the dissertation “**THE GROWTH OF OVER-THE-TOP (OTT) PLATFORMS AND ITS USAGE ANALYSIS DURING THE COVID-19 PANDEMIC PERIOD**” is a bonafide record of the project work carried out by **Ashok. N. Kumar** in partial fulfilment for the award of the Degree of Master in Arts in Economics of Mahatma Gandhi University, Kottayam during the year 2021.

Dr. Sunil Abraham Thomas

Ms. Liji Lawrence

Dr. Sunil Abraham Thomas
Head, Department of Economics
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UNION CHRISTIAN COLLEGE, ALUVA
DEPARTMENT OF ECONOMICS



CERTIFICATE

This is to certify that the dissertation entitled **“ONLINE TRANSACTIONS AND PAYMENT HABITS OF PEOPLE: NORTH PARAVUR TALUK”** is a bona fide record of the project work carried out by **AMRITHESWARI P.S** in partial fulfilment for the award of the Degree of Master in Arts in Economics of Mahatma Gandhi University, Kottayam during the year 2021.

Dr Sunil Abraham Thomas

Head of the Department

Dr. Sunil Abraham Thomas
Head, Department of Economics
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Dr Sunil Abraham Thomas

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CERTIFICATE

This is to certify that the dissertation entitled **“A STUDY ON THE IMPACT OF E-POS MACHINE IN RATION SHOPS”** is a bonafide record of the project work carried out by **AISWARYA SANTHOSH** in partial fulfilment for the award of the Degree of Master in Arts in Economics of Mahatma Gandhi University, Kottayam during the year 2021

Dr. Sunil Abraham Thomas

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Dr. Sunil Abraham Thomas
Head Department of Economics
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Dr. Sunil Abraham Thomas

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CERTIFICATE

This is to certify that the dissertation entitled "A STUDY ON TAX PLANNING AMONG WORKING WOMEN" is a bonafide record of the project work carried out by AGINA PAUL V in partial fulfilment for the award of the Degree of Master in Arts in Economics of Mahatma Gandhi University, Kottayam during the year 2021

Dr. Sunil Abraham Thomas

Head of the Department

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Head, Department of Economics
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Dr. Sunil Abraham Thomas

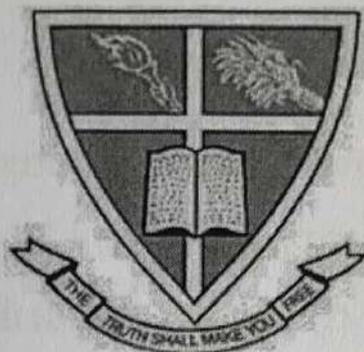
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Dr. Sunil Abraham Thomas
Dr. Sunil Abraham Thomas
Head, Department of Economics
Union Christian College
Head of the Department of Economics



Ms. Liji Lawrence

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CERTIFICATE

This is to certify that the dissertation titled “**RISING FEMALE EDUCATION AND FALLING WORKFORCE PARTICIPATION WITH SPECIAL REFERENCE TO ALANGAD PANCHAYAT**” is a bonafide record of the project work carried out by **RESHMA GEORGE P.G**, in partial fulfilment of the requirements for the award of the degree in Master of Arts in Economics of Mahatma Gandhi University, Kottayam during the year 2021.

Dr Sunil Abraham Thomas

Head of the department

Dr. Sunil Abraham Thomas
Head, Department of Economics
Union Christian College
U.C College, Aluva-2



Ms. Nino Baby

Faculty Guide

Department of Economics

U.C College, Aluva-2



CERTIFICATE

This is to certify that the dissertation entitled **“MGNREGP AND ITS IMPLEMENTATION IN KOTTUVALLY GRAMA PANCHAYATH”** is a bona fide record of the project work carried out by **VISHNUPRIYA P K** in partial fulfilment for the award of the Degree of Master in Arts in Economics of Mahatma Gandhi University, Kottayam during the year 2021.

Dr. Sunil Abraham Thomas

Head of the Department

Department of Economics

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Dr. Sunil Abraham Thomas
Head, Department of Economics
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Dr. Sunil Abraham Thomas

Faculty Guide

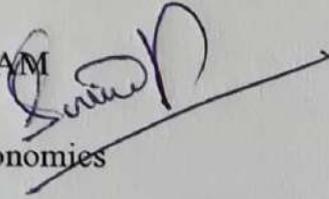
U.C College, Aluva - 2
Dr. Sunil Abraham Thomas
Department of Economics
Union Christian College
Aluva - 2



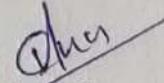
CERTIFICATE

Certified that this thesis "**ONLINE LEARNJNG DURING LOCKDOWN PERIOD DUETO COVID-19 PANDEMIC: A STUDY WITH REFERENCETO ERNAKULAM DISTRICT**: is a bonafide piece of project done by Ms. Thoufeera M.S under my supervision. The thesis is submitted for the award of the degree of Master of Arts in Economics.

Dr.SUNIL ABRHAM
THOMAS
Department of Economies



Dr. Ann George
Faculty Guide
Department of Economics



UNION CHRISTIAN COLLEGE, ALUVA



CERTIFICATE

This is to certify that the dissertation "A CASE STUDY ON MUSLIM WOMEN ENTREPRENEURS" is a bonafide record of the project work carried out by SNEHA S in partial fulfilment for the award of the Degree of Bachelor in Master of Economics of Mahatma Gandhi University, Kottayam during the year 2021.

Dr. Sunil Abraham Thomas

Dr. Ann George

Head of the Department of Economics
Dr. Sunil Abraham Thomas
Head, Department of Economics
Department of Economics
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Department of Economics

Union Christian College



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DEPARTMENT OF ECONOMICS



CERTIFICATE

This is to certify that the dissertation entitled **“HOUSEHOLD SOLID WASTE MANAGEMENT AND ENVIRONMENTAL PROTECTION IN NORTH PARAVUR MUNICIPALITY: A CASE STUDY** is a bona fide record of the project work carried out by **SANDRA P TARJINEEV (190011000956)** in partial fulfillment for the award of the Degree of Master in Arts in Economics of Mahatma Gandhi University, Kottayam during the year 2021.

Dr Sunil Abraham Thomas

Ms. Nino Baby

Dr. Sunil Abraham Thomas
Head of the Department
Head, Department of Economics
Union Christian College
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U.C College, Aluva-2

UNION CHRISTIAN COLLEGE

DEPARTMENT OF ECONOMICS



CERTIFICATE

Certified that the dissertation entitled **“AN INTEGRATED FARMING SYSTEM FOR A SUSTAINABLE PRODUCTION WITH SPECIAL REFERENCE TO MOOKKANNOOR GRAMA PANCHAYAT”** is a record of the bona fide project work carried out by ROSE MARY PAUL (Reg.No:-190011000955) in partial fulfilment for the award of the degree of Masters of Arts in Economics, Mahatma Gandhi University, Kottayam, during the year 2019-2021 under my guidance.

Dr. Sunil Abraham Thomas

Head of the Department of Economics
Dr. Sunil Abraham Thomas
Head, Department of Economics
Department of Economics
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Ms. Nino Baby

Faculty Guide
Department of Economics
U.C. College, Aluva

Place: Aluva

Date:



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DEPARTMENT OF ECONOMICS



CERTIFICATE

This is to certify that the dissertation entitled “A STUDY ON THE USE OF DIGITAL FINANCIAL SERVICES” is a bonafide record of the project work carried out by **CELENE PAUL** (190011000949) in partial fulfilment of the requirement for the award of the degree of Master of Arts in Economics, at the Department of Economics, Union Christian College Aluva, under my guidance and submitted to Mahatma Gandhi University, Kottayam during the year 2021. The project has been done with prior approval from the Department.

Countersigned by

DR.SUNIL ABRAHAM THOMAS

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Place: Aluva

Date

CERTIFICATE



This is to certify that the dissertation titled "A CASE STUDY ON THE HANDLOOM INDUSTRY IN CHENDAMANGALAM IN THE CONTEXT OF COVID-19" is a bonafide record of the project work carried out by SANITHA SADANANDAN ,In partial fulfilment for the award of the Degree of Master of Arts in Economic of Mahatma Gandhi University, Kottayam .

Dr. SUNIL ABRAHAM THOMAS

Head of the Department

Department of Economics

Dr. ANN GEORGE

Faculty Guide

Department of Economics

**ENVIRONMENTAL DISINTEGRATION CAUSED BY
THE MIGRATION IN VATHIKUDY GRAMA
PANCHAYATH**

Dissertation submitted to Mahatma Gandhi University, Kottayam
In partial fulfillment of the requirements for the award of the
Degree of Master of Arts in History

ALEX M GEORGE

REG. NO: 190011005184

M.A. History

IV Semester (2019-21)

**POST GRADUATE DEPARTMENT AND RESEARCH
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**RESEARCH AND POSTGRADUATE DEPARTMENT OF
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UNION CHRISTIAN COLLEGE, ALUVA-2**

(Affiliated to Mahatma Gandhi University, Kottayam)

August 2021

**A BRIEF STUDY ON EDUCATIONAL RESERVATION AND ITS
IMPACTS ON SCHEDULED CASTES**

Dissertation submitted to Mahatma Gandhi University, Kottayam
in partial fulfillment of the requirements for the award of the
Degree of Master of Arts in History

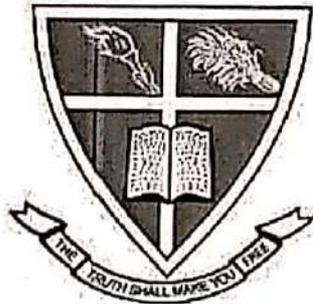
AMEENA .P.A

REG. NO: 190011005185

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**RESEARCH AND POSTGRADUATE DEPARTMENT OF
HISTORY**

UNION CHRISTIAN COLLEGE, ALUVA-2

(Affiliated to Mahatma Gandhi University, Kottayam)

August 2021

**THALAPPAVU: THE FILMIC REPRESENTATION OF NAXAL
MOVEMENT IN MALABAR**

Dissertation submitted to Mahatma Gandhi University, Kottayam in partial
fulfillment of the requirements for the award of the
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ANU ANIYAN

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**RESEARCH AND POSTGRADUATE DEPARTMENT OF HISTORY
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(Affiliated to Mahatma Gandhi University, Kottayam)

August 2021

BRITISH INDIAN FOREST ACT OF 1865: A TEXTUAL ANALYSIS

Dissertation submitted to Mahatma Gandhi University, Kottayam
in partial fulfillment of the requirements for the award of the
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ATHIRA C.A
REG. NO: 190011005190

M.A. History

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**POST GRADUATE DEPARTMENT AND RESEARCH
CENTRE IN HISTORY**



RESEARCH AND POSTGRADUATE DEPARTMENT OF HISTORY

UNION CHRISTIAN COLLEGE, ALUVA-2
(Affiliated to Mahatma Gandhi University, Kottayam)

August 2021

**FISHERFOLK IN CHELLANAM: KNOWLEDGE
AND MENTALITY**

A Dissertation submitted to Mahatma Gandhi University, Kottayam in
Partial fulfillment of the requirements for the award of the
Degree of Master of Arts in History

ATHIRA DEVADAS

REG. NO: 190011005189

**M.A. History
IV Semester (2019-21)**

**POST GRADUATE DEPARTMENT AND RESEARCH
CENTRE IN HISTORY
UNION CHRISTIAN COLLEGE, ALUVA-2**



**RESEARCH AND POSTGRADUATE DEPARTMENT OF
HISTORY**

UNION CHRISTIAN COLLEGE, ALUVA-2

(Affiliated to Mahatma Gandhi University, Kottayam)

August 2021

The origin and growth of Postal service in Travancore -Cochin princely state
during Nineteenth century
Dissertation submitted to Mahatma Gandhi University, Kottayam
in partial fulfillment of the requirements for the award of the
Degree of Master of Arts in History

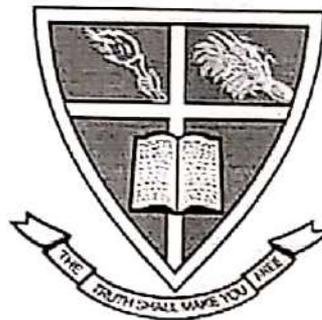
DIVYA GOPALAKRISHNAN

REG: 190011005191

M.A. History

IV Semester (2019-21)

**POST GRADUATE DEPARTMENT AND RESEARCH
CENTRE IN HISTORY
UNION CHRISTIAN COLLEGE, ALUVA-2**



**RESEARCH AND POSTGRADUATE DEPARTMENT OF
HISTORY**

UNION CHRISTIAN COLLEGE, ALUVA-2

(Affiliated to Mahatma Gandhi University, Kottayam)

August 2021

**CONTRIBUTION TO MALAYALAM LANGUAGE BY
HERMAN GUNDERT**

*Dissertation submitted
to Mahatma Gandhi University, Kottayam
in partial fulfillment of the requirements for the award
of the Degree of Master of Arts in History*

JIBIN JOSEPH

REG. NO: 190011005192

M.A. History

IV Semester (2019-21)

**POST GRADUATE DEPARTMENT AND RESEARCH
CENTRE IN HISTORY
UNION CHRISTIAN COLLEGE, ALUVA-2**



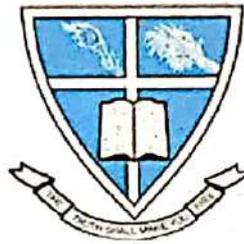
Affiliated to the

Mahatma Gandhi University, Kottayam

August 2021

LOCATING SYRIAN CHRISTIANS IN THE HISTORY OF ANGAMALI

A dissertation report submitted to Mahatma Gandhi University, Kottayam in partial fulfillment of the requirement for the award of the Degree of Master of Arts in History



JOSEPH JOSE

REG. NO – 190011005193

M.A HISTORY (2019-21)

IV Semester

under the guidance of

Dr. Jenee Peter

Assistant Professor

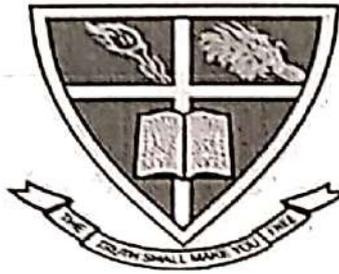
Department of History

Union Christian College, Aluva

(Affiliated to Mahatma Gandhi University, Kottayam)

AUGUST 2021

**CHANGING IDENTITIES AMONG THE TRADITIONAL GOLDSMITHS
OF KERALA: A HISTORICAL STUDY**



RESEARCH AND POSTGRADUATE DEPARTMENT OF HISTORY

UNION CHRISTIAN COLLEGE, ALUVA-2

(Affiliated to Mahatma Gandhi University, Kottayam)

AUGUST 2021

KRISHNAPRIYA V S

REG NO. 190011005195

UNION CHRISTIAN COLLEGE, ALUVA-2

**A STUDY OF THE CONTRIBUTIONS OF KOTTAKKAL
ARYA VAIDYA SALA TO AYURVEDA**

Dissertation submitted to Mahatma Gandhi University, Kottayam
in partial fulfillment of the requirements for the award of the
Degree of Master of Arts in History

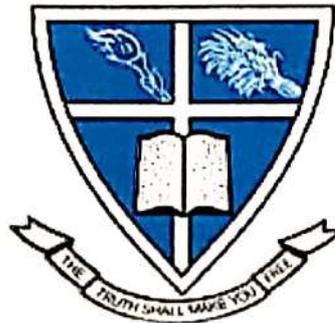
LAKSHMI R.

REG. NO: 190011005196

M.A. History

IV Semester (2019-21)

**POST GRADUATE DEPARTMENT AND RESEARCH
CENTRE IN HISTORY
UNION CHRISTIAN COLLEGE, ALUVA-2**



**RESEARCH AND POSTGRADUATE DEPARTMENT OF HISTORY
UNION CHRISTIAN COLLEGE, ALUVA-2
(Affiliated to Mahatma Gandhi University, Kottayam)**

August 2021

**THE SOCIO-ECONOMIC IMPRESSIONS OF TELK IN
THE LIFE OF ANGAMALY**

Dissertation submitted to Mahatma Gandhi University, Kottayam
in partial fulfillment of the requirements for the award of the
Degree of Master of Arts in History

MRIDULA MURALIDHARAN

REG. NO: 190011005197

M.A. History

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**POST GRADUATE DEPARTMENT AND RESEARCH
CENTRE IN HISTORY
UNION CHRISTIAN COLLEGE, ALUVA-2**



RESEARCH AND POSTGRADUATE DEPARTMENT OF HISTORY

UNION CHRISTIAN COLLEGE, ALUVA-2

(Affiliated to Mahatma Gandhi University, Kottayam)

August 2021

DEPARTMENT OF HISTORY

**THE PRESENT AND PAST OF PANDEMICS: COVID 19
AS A HISTORICAL TEXT**

Dissertation submitted to Mahatma Gandhi University, Kottayam in partial
fulfillment of the requirements for the award of the
Degree of Master of Arts in History

NEERAJA. N

REG. NO: 190011005198

M.A. History

IV Semester (2019-2021)

**POST GRADUATE DEPARTMENT AND RESEARCH
CENTRE IN HISTORY
UNION CHRISTIAN COLLEGE, ALUVA-2**



**RESEARCH AND POSTGRADUATE DEPARTMENT OF
HISTORY**

UNION CHRISTIAN COLLEGE, ALUVA-2

(Affiliated to Mahatma Gandhi University, Kottayam)

August 2021

AALAHAYUDE PENMAKKAL: A POSTMODERN READING

Dissertation submitted to Mahatma Gandhi University, Kottayam
in partial fulfillment of the requirements for the award of the
Degree of Master of Arts in History

PRABEENA JOHNSON

REG. NO: 190011005199

M.A. History

IV Semester (2019-21)

POST GRADUATE DEPARTMENT AND RESEARCH

CENTRE IN HISTORY

UNION CHRISTIAN COLLEGE, ALUVA-2



RESEARCH AND POSTGRADUATE DEPARTMENT OF

HISTORY

UNION CHRISTIAN COLLEGE, ALUVA-2

(Affiliated to Mahatma Gandhi University, Kottayam)

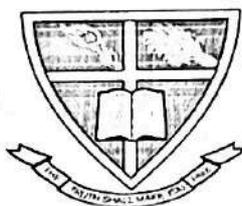
August 2021

CERTIFICATE

DEPARTMENT OF CHEMISTRY

UNION CHRISTIAN COLLEGE

ALUVA



This is to certify that the Project work entitled "CERIA NANOPARTICLES SYNTHESISED BY SOLUTION COMBUSTION METHOD A ROBUST ADSORBENT FOR THE REMOVAL OF ORGANIC DYES FROM WATER" is bonafide work carried out by ANJITHA E K, under supervision of Dr. SUNIL SEKHAR A C, Assistant Professor, DEPARTMENT OF CHEMISTRY, UNION CHRISTIAN COLLEGE, ALUVA during 2019-2021, in partial fulfilment of the requirements for the award of the DEGREE OF MASTER SCIENCE IN CHEMISTRY.

Forwarded by,

Ms. MINU JOYS

UNION CHRISTIAN COLLEGE

HEAD OF THE DEPARTMENT

DEPARTMENT OF CHEMISTRY

UNION CHRISTIAN COLLEGE

ALUVA

Dr. SUNIL SEKHAR A C

UNION CHRISTIAN COLLEGE

ASSISTANT PROFESSOR

DEPARTMENT OF CHEMISTRY

UNION CHRISTIAN COLLEGE

ALUVA

EXTERNAL EXAMINERS :

- 1) Dr. Jenish Paul
- 2) Dr. Simi Pushpan. K
- 3) Dr. Ajalesh. B. Nair

DEPARTMENT OF CHEMISTRY



UNION CHRISTIAN COLLEGE, ALUVA

CERTIFICATE

This is to certify that the project work entitled “**SYNTHESIS OF GRAPHENE QUANTUM DOT AND INVESTIGATING ITS CONCENTRATION DEPENDENT THERMAL DIFFUSIVITY USING THERMAL LENS TECHNIQUE**” which is submitted by **DIVYA BENNY** for the award of Degree of Master of Science in chemistry is a record bonafide work done by her in International School of Photonics, CUSAT.

Forwarded by


Ms. MINU JOYS

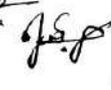
Head of the Department of Chemistry
Union Christian College, Aluva


Dr. AJILESH B NAIR

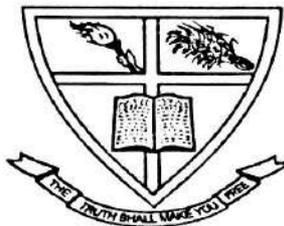
Assistant Professor
Department of Chemistry
Union Christian College, Aluva

Examiner 1: 
Dr. Ajalesh B. Nair

Examiner 2: 
Dr. Gomi Pushpan. K

Date: 16/8/21 
Dr. Jenish Paul

DEPARTMENT OF CHEMISTRY



UNION CHRISTIAN COLLEGE ALUVA

CERTIFICATE

This is to certify that this project entitled "SYNTHESIS OF IRON OXIDE NANOPARTICLES USING THE LEAF EXTRACT OF CARICA PAPAYA" Submitted by FARSANA K. N for the award of M.sc degree in CHEMISTRY is an authentic record of project work carried out under my supervision and guidance.

Forwarded by,


Ms. MINU JOYS

Head of the Department

Department of Chemistry

Union Christian College


Dr. NELSON JOSEPH. P

Assistant Professor

Department of Chemistry

Union Christian College

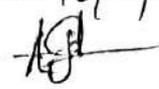
External Examiner 1:


Dr. Jenish Paul

External Examiner 2:

Dr. Shimi Pushpan.K 

Date: 16/8/21

3. Dr. Ajalesh. B. Nair 



CERTIFICATE

This is to certify that the project work entitled "ANTIBACTERIAL STUDIES OF COPPER AND ZINC SCHIFF BASES COMPLEX SYNTHESISED USING NATURAL ACID CATALYSTS" done by KRISHNA.N.ARAVINDAN under our guidance at the Department of Chemistry and the Department of Biotechnology, UNION CHRISTIAN COLLEGE, ALUVA.

Dr. Sareen John

Co - Guide

Assistant Professor

Department of Biotechnology

U.C.College, Aluva

Dr. Jenish Paul

Supervising Guide

Assistant Professor

Department of Chemistry

U.C.College, Aluva

Ms. Minu Joys

Head of the Department

Department of Chemistry

U.C.College, Aluva

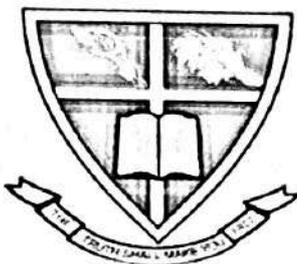
Place : Aluva

Date : 17-08-2021

Examiners :

1. Dr. Jenish Paul
2. Dr. Ajalish. B. Nini
3. Dr. Simi Pushpan. K

DEPARTMENT OF CHEMISTRY



UNION CHRISTIAN COLLEGE -ALUVA

CERTIFICATE

This is to certify that the project work entitled "SYNTHESIS OF GRAPHENE QUANTUM DOT AND INVESTIGATING ITS SOLVENT DEPENDENT THERMAL DIFFUSIVITY USING THERMAL LENS TECHNIQUE" which is submitted by MANASA K P for the award of Degree of Master of Science in chemistry is a record bonafide work done by her in International School of Photonics, CUSAT.

Forwarded by

Ms. MINU JOYS

Head of the Department
Department of Chemistry
Union Christian College

Dr. SIMI PUSHPAN K.
Assistant professor
Department of Chemistry
Union Christian College

External Examiner 1: *Valery* Dr. Jenish Paul

External Examiner 2: Dr. Simi Pushpan K

External Examiner 3: Dr. Ajalesh. P. Nair

Date: 16/8/21

CERTIFICATE

DEPARTMENT OF CHEMISTRY
UNION CHRISTIAN COLLEGE
ALUVA



This is to certify that the project work entitled "SEPARATION OF TOXIC CHROMIUM (VI) USING BIOSORBENT EGG SHELL MEMBRANE" is a bonafide work carried out by Ms. MARIYA JOY, DEPARTMENT OF CHEMISTRY, UNION CHRISTIAN COLLEGE, ALUVA, in partial fulfilment of the requirements for the award of the DEGREE OF MASTER OF SCIENCE IN CHEMISTRY (2019-2021) and that the project has not been submitted for the award of any Degree/Diploma/Fellowship.

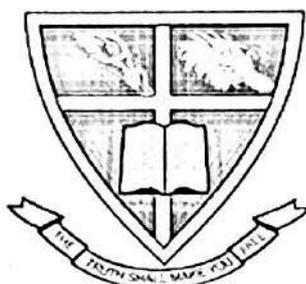
Dr. DIVYA SUSAN PHILIPS
ASSISTANT PROFESSOR
DEPARTMENT OF CHEMISTRY
UNION CHRISTIAN COLLEGE, ALUVA

Forwarded By,
Ms. MINU JOYS
HEAD OF THE DEPARTMENT
DEPARTMENT OF CHEMISTRY
UNION CHRISTIAN COLLEGE, ALUVA

- 1) Dr. Jenish Paul
- 2) Dr. Ajalesh B. Nair
- 3) Dr. Simi Pushpan. K

UNION CHRISTIAN COLLEGE

ALUVA



CERTIFICATE

This is to certify that the project work entitled "POROUS ALUMINA NANOPARTICLES AS ENVIRONMENTALLY BENIGN ADSORBENT FOR THE REMOVAL ORGANIC DYE MOLECULES" is done by NEENU PAULOSE of final MSc chemistry, Union Christian College, Aluva during the academic year 2019-2021


Ms. Minu Joys

Head of the Department

Department of Chemistry

UC College


Dr. Sunil Sekhar A.C

Supervising Guide

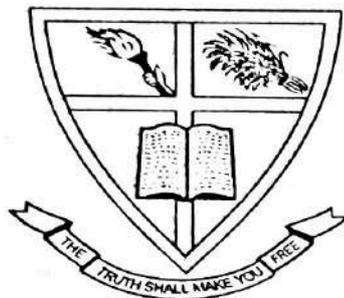
Department of Chemistry

UC College


External Examiner

- 1) Dr. Jemish Paul 
- 2) Dr. Simi Pushpan. K 
- 3) Dr. Ajalesh. B. Nair 

DEPARTMENT OF CHEMISTRY



UNION CHRISTIAN COLLEGE-ALUVA

CERTIFICATE

This is to certify that this project entitled "GREEN SYNTHESIS AND CHARACTERIZATION OF VANILLIN DERIVED SCHIFF BASES AND THEIR COBALT COMPLEXES" submitted by RENU ROY for the award of M.Sc. degree in chemistry is an authentic record of project work carried out under my supervision and guidance.

Forwarded by


Ms. MINU JOYS

Head of the Department

Department of Chemistry

Union Christian College


Dr. SIMI PUSHPAN K

Assistant Professor

Department of Chemistry

Union Christian College

Examiner 1:

Valeed
Do. Jenish Paul 

Examiner 2:

Do. Simi Pushpan K 

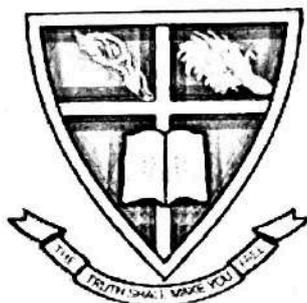
Examiner 3:

Do. Ajalesh K Nair 

Date

16/8/21

DEPARTMENT OF CHEMISTRY
UNION CHRISTIAN COLLEGE, ALUVA



CERTIFICATE

This is to certify that this project entitled "SYNTHESIS OF COPPER DOPED CERIA NANOPARTICLES AND CHARACTERIZATION" Carried out by SHAHANA KADER under the supervision of Ms. MINU JOYS, Head of the Department, Department of Chemistry, Union Christian College, Aluva, In partial fulfilment of requirement of Degree of Master of Science in Chemistry.

Ms. MINU JOYS

Head of the Department

Department of Chemistry

Union Christian College, Aluva

Valeried

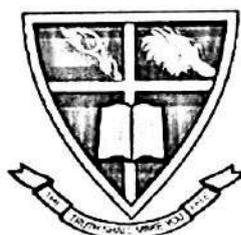
Examiner 1: Dr. Jenish Paul

Examiner 2: Dr. Sime Pushpan.K

3. Dr. Ajalish. B. Nair

DATE 16/8/21

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



CERTIFICATE

This is to certify that the project work entitled "**COMPARATIVE STUDY OF GREEN SYNTHESIS OF SILVER NANOPARTICLES USING FLOWER AND LEAF EXTRACTS OF *MIMUSOPS ELENGI***" is a bonafide work carried out by **SHARMINAZ C S**, Department of Chemistry, Union Christian College, Aluva during 2019-2021, in partial fulfilment of the requirements for the award of the Degree of Master of Science in Chemistry and that the project has not submitted for the award of any Degree/Diploma/Fellowship.

Forwarded by,

Ms. Minu Joys

Head of Department,
Department of Chemistry,
Union Christian College,
Aluva.

Dr. Neethumul Varghese

Assistant Professor,
Department of Chemistry,
Union Christian College,
Aluva.

Examiners

- ① Dr. Jenish Paul
- ② Dr. Simi Pushpank
- ③ Dr. Ajalesh. B. Nair

**Discourses in Quest: Sardonic Allegory and Subaltern elements in Shaw's "The
Black Girl in Search of God".**

Dissertation submitted to Mahatma Gandhi University
in partial fulfilment of the requirements for the award of the Degree of
Master of Arts in English Language and Literature

Submitted by

HARSHA M BYJU

Reg. No: 190011002487



IV Semester

MA English Language and Literature

Department of English

Union Christian College, Aluva

2019-2021

**Discourses of Oppression: Reading the Body in *Women Without Men* and
*Persepolis***

Dissertation submitted to Mahatma Gandhi University in partial
fulfilment of the requirements for the award of the Degree of
Master of Arts in English Language and Literature

Submitted by

ARUNTHATHI T S

Reg. No: 190011002480



IV Semester

MA English Language and Literature

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Union Christian College, Aluva

2019-2021

Gender Blurring Through the Device of Chronotope in the Movie *Predestination*

Dissertation submitted to Mahatma Gandhi University

in partial fulfillment of the requirements for the award of the Degree of

Master of Arts in English Language and Literature

Submitted by

ALEENA MARY JOSE

Reg. No: 190011002475



IV Semester

MA English Language and Literature

Department of English

Union Christian College, Aluva

2019-2021

**Tracing Elements of Gothic Literature by Revisiting the Victorian England of
Sir Arthur Conan Doyle's *Sherlock Holmes: A Study on Gothic Theory***

Dissertation submitted to Mahatma Gandhi University in partial fulfilment of the
requirements for the award of the Degree of Master of Arts in English Language and
Literature

Submitted by

AMRUTHAVENI T J

Reg. No. 190011002477



IV Semester

M.A. English Language and Literature

Department of English

Union Christian College, Aluva

2019-2021

**Broadening Cli-Fi through the Concept of the Anthropocene: *Gun Island*
as the New Paradigm of Climate Change Fictions**

Dissertation submitted to Mahatma Gandhi University in partial fulfillment of the
requirement for the award of the Degree of Master of Arts in English Language and
Literature

Submitted By

Athira A

Reg No.190011002481



IV Semester

MA English Language and Literature

Department Of English

Union Christian College, Aluva

2019-2021

Death Note: An Application of Game Theory to a Necropolitical Reading

Dissertation submitted to Mahatma Gandhi University

in partial fulfillment of the requirements for the award of the Degree of

Master of Arts in English Language and Literature

Submitted by

RINU TOM

Reg. No: 190011002491



IV Semester

MA English Language and Literature

Department of English

Union Christian College, Aluva

2019-2021

**Narrating Trauma: Everything Under as Daisy Johnson's Retelling of
Oedipus Complex**

Dissertation submitted to Mahatma Gandhi University

in partial fulfillment of the requirements for the award of the degree of

Master of Arts in English and Literature

Submitted by : Aamina. N. A

Reg No: 190011002474



IV Semester

MA English Language and Literature

Department of English

Union Christian College, Aluva

2019-2021

**Narrating Trauma: Everything Under as Daisy Johnson's Retelling of
Oedipus Complex**

Dissertation submitted to Mahatma Gandhi University

in partial fulfillment of the requirements for the award of the degree of

Master of Arts in English and Literature

Submitted by : Aamina. N. A

Reg No: 190011002474



IV Semester

MA English Language and Literature

Department of English

Union Christian College, Aluva

2019-2021

(Per)Forming the Animal: A Study of *Jallikattu* and *Odiyan*

Dissertation submitted to Mahatma Gandhi University

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

Master of Arts in English Language and Literature

Submitted by

Jilna Mary Pius

Reg. No: 190011002488



IV Semester

MA English Language and Literature

Department of English

Union Christian College, Aluva

2019-2021

**Politics of Food – A Reading of Anita Desai’s *Fasting Feasting* and Santhosh Aechikkanam ‘s
‘Biryani’**

Dissertation submitted to Mahatma Gandhi University

in partial fulfillment of the requirements for the award of the Degree of

Master of Arts in English Language and Literature

Submitted by

GAYATHRI MANU NAIR

Reg. No: 190011002486



IV Semester

MA English Language and Literature

Department of English

Union Christian College, Aluva

2019-2021

Declaration

I, Gayathri Manu Nair, hereby declare that this dissertation titled, 'Politics of Food- A Reading of Anita Desai's *Fasting Feasting* and Santhosh Aechikkanam 's 'Biryani' 'is a genuine record of the original research done by me and that this work has not been submitted to any other University or Institute for the award of any degree, diploma/fellowship.

Narrating Illness: A Study of Jose Saramago's *Blindness*

Dissertation submitted to Mahatma Gandhi University

in partial fulfillment of the requirements for the award of the Degree of Master of Arts
in English Language and Literature

Submitted by

ANJALI C T.

Reg No : 190011002478



IV Semester

M A English Language and Literature

Department of English

Union Christian College, Aluva

2019-2021

Union Christian College, Aluva

CERTIFICATE

This is to certify that the project entitled "PREPARATION AND CHARACTERISATION OF TITANIUM DIOXIDE NANOTUBE" has been submitted to the Department of Physics, Union Christian College, Aluva which is (affiliated to Mahatma Gandhi University) during the academic year 2018-2021 for the fulfilment of the requirement for the award of the Degree of bachelor in physics by the student.

Fathima Beevi V.H
(180021040284)



Dr. Shinoj V.K
(Project guider)



Dr. Alex Mathew
(Head of the Department)

Union Christian College, Aluva

CERTIFICATE

This is to certify that the project entitled "PREPARATION AND CHARACTERISATION OF TITANIUM DIOXIDE NANOTUBE" has been submitted to the Department of Physics, Union Christian College, Aluva which is (affiliated to Mahatma Gandhi University) during the academic year 2018-2021 for the fulfilment of the requirement for the award of the Degree of bachelor in physics by the student.

INDRAJA DEVARAJAN
(180021040287)



Dr. Shinoj V.K
(Project guider)



Dr. Alex Mathew
(Head of the Department)

CERTIFICATE

UNION CHRISTIAN COLLEGE

Accredited by National Assessment and Accreditation Council (NACC)

PROJECT WORK CERTIFICATE

Certified that this is bonafide report on the Project Work entitled

“SMART TRASH BIN” Submitted by

JOPHI JOSEPH

In partial fulfilment of the requirements for the award of the degree of B.Sc. in Physics by Mahatma Gandhi University during the academic year 2018-2021 under the guidance of Dr. Alex Mathew, at Department of Physics, UNION CHRISTIAN COLLEGE, Aluva.

Submitted to the university exam held on

Internal Guide

Dr. Alex Mathew

Head of the Department

Dr. Alex Mathew



UNION CHRISTIAN COLLEGE, ALUVA



CERTIFICATE

This is to certify that the dissertation "AUTOMATIC TEMPERATURE CONTROLLED FAN" is a bonafide record of the project work carried out by Jyothi Raju in partial fulfillment for the award of the Degree of Bachelor of Science in Physics of Mahatma Gandhi University, Kottayam during the year 2021

Dr. Alex Mathew
Head of the Department
Department of Physics
U.C. College, Aluva

Dr. Alex Mathew
Faculty Guide
Department of Physics
U.C. College, Aluva

Alex Mathew

CERTIFICATE

UNION CHRISTIAN COLLEGE

**Accredited by National Assessment and Accreditation Council
(NACC)**

PROJECT WORK CERTIFICATE

Certified that this is bonafide report on the Project Work entitled

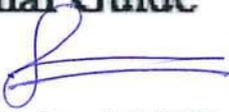
**“OBSTACLE AVOIDING ROBOT USING
ULTRASONIC SENSOR”**

Submitted by

LAKSHMI NANDHANA V.S

**In partial fulfilment of the requirements for the award of the
degree of B.Sc. in Physics by Mahatma Gandhi University
during the academic year 2018-2021 under the guidance of
Dr.Shinoj V.K, at Department of Physics, UNION
CHRISTIAN COLLEGE, Aluva. Submitted to the university
exam held on**

Internal Guide


Dr.Shinoj V.K


**Head of the
Department**

Dr. Alex Mathew

CERTIFICATE

UNION CHRISTIAN COLLEGE

Accredited by National Assessment and Accreditation Council (NAAC)

PROJECT WORK CERTIFICATE

Certified that this is a bona fide report on the Project Work entitled
"UNDERWATER IMAGE ENHANCEMENT."

Submitted by

REMEESA MAJEED

In partial fulfilment of the requirements for the award of the degree of B.Sc. in Physics by Mahatma Gandhi University during the academic year 2018-2021 under the guidance of Dr Shinoj V K, at Department of Physics, UNION CHRISTIAN COLLEGE, ALUVA.

Submitted to the university exam held on

Internal Guide

Dr Shinoj V K

Head of the Department

Dr Alex Mathew

Certificate

This is to certify that the project work entitled "Fabrication and Characterization of Dye Sensitized Solar Cell" is the bonafide work done by Shimja K.S under my guidance at the Department of Physics, Union Christian College, Aluva in partial fulfillment of B.Sc. Physics degree course of Mahatma Gandhi University, Kottayam.



Dr. Alex Mathew,
Head of the Department,
Department of Physics,
UC College, Aluva.



Dr. Shinoj V.K,
Assistant Professor,
Department of Physics,
UC College, Aluva.

CERTIFICATE

UNION CHRISTIAN COLLEGE

Accredited by National Assessment and Accreditation Council (NAAC)

PROJECT WORK CERTIFICATE

Certified that this is a bona fide report on the Project Work entitled

"UNDERWATER IMAGE ENHANCEMENT."

Submitted by

SREELAKSHMI A A

In partial fulfilment of the requirements for the award of the degree of B.Sc. in Physics by Mahatma Gandhi University during the academic year 2018-2021 under the guidance of Dr Shinoj V K, at Department of Physics, UNION CHRISTIAN COLLEGE, ALUVA.

Submitted to the university exam held on

Internal Guide

Dr Shinoj V K



Head of the Department

Dr Alex Mathew



CERTIFICATE

UNION CHRISTIAN COLLEGE

Accredited by National Assessment and Accreditation
Council (NAAC)

PROJECT WORK CERTIFICATE

Certified that this is bona fide report on the Project work
entitled

A REVIEW OF JEANS INSTABILITY

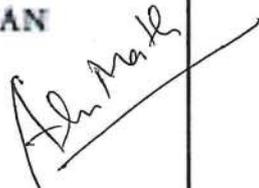
Submitted by

SRIHARI R S

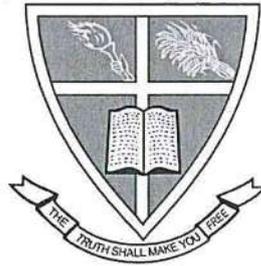
in partial fulfilment of the requirements for the award of the degree of B.Sc.in
Physics by Mahatma Gandhi University during the academic year 2018-2021 under
the guidance of Dr.K Madhu. at Department of Physics, UNION CHRISTIAN
COLLEGE, ALUVA. Submitted to the university exam held on

Dr.K Madhu
Guide

Dr. Alex Mathew
Head of the Department



UNION CHRISTIAN COLLEGE



CERTIFICATE

This is to certify that the project entitled “**Liquid Phase Exfoliation of Graphene and its Characterisation**” is a bonafide work done by the candidate SHILPA MARIAM SAMUEL(Reg No:190011019397) under my guidance and supervision at the Research centre of Department of Physics, U C College, Aluva, and this project was carried out in partial fulfilment of the requirement for the award of the degree of Master of Science in Physics.

A handwritten signature in blue ink, consisting of a large, stylized initial 'S' followed by a horizontal line that extends to the right and then loops back under the 'S'.

Dr. Shinoj V K

Assistant Professor

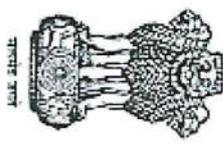
Department of Physics

Union Christian College, Aluva

भारत सरकार
अंतरिक्ष विभाग

विक्रम साराभाई अंतरिक्ष केन्द्र

विद्यमानपुरम-695 022
केरल, भारत
फोन : (0471) 256 3326
फैक्स : (0471) 270 6535



Government of India
Department of Space
Vikram Sarabhai Space Centre
Thiruvananthapuram-695 022

Kerala, INDIA
Telephone : (0471) 256 3326
Fax : (0471) 270 6535

लागू/Gram: SPACE

ईमेल/e-mail:kk_sobhan@vssc.gov.in

Space Physics Laboratory

Certificate

This is to certify that this project report entitled "A study on characterization of aerosol black carbon using laser induced incandescence technique" submitted by Ms. Aiswarya PK for the partial fulfillment of the requirement for the award of the Degree of Master of Science in Physics has been successfully carried out at the Space Physics Laboratory, Vikram Sarabhai Space Centre, Thiruvananthapuram.

I express my hearty best wishes for her success in life.

Sobhan Kumar Kompalli
Scientist-SE,
SPL, VSSC
Thiruvananthapuram

CERTIFICATE

This is to certify that the dissertation entitled "SPRAY DEPOSITED Ga₂O₃ THIN FILMS FOR UV DETECTOR APPLICATIONS" is a record of original work carried out by ASWATHY R NAIR under my supervision and guidance during 2019-2021 in the partial fulfilment of the requirement for the award of degree Master of Science in Physics under Mahatma Gandhi University, Kottayam.



Ms. Rakshy Raphael
Assistant Professor,
Department of Physics
Union Christian College, Aluva

CERTIFICATE

This is to certify that the dissertation entitled "SPRAY DEPOSITED Ga₂O₃ THIN FILMS FOR UV DETECTOR APPLICATIONS" is a record of original work carried out by BISSYMOL T THOMAS under my supervision and guidance during 2019-2021 in the partial fulfillment of the requirement for the award of degree Master of Science in Physics under Mahatma Gandhi University, Kottayam.


Ms. Rakhy Raphael
Assistant Professor,
Department of Physics
Union Christian College, Aluva

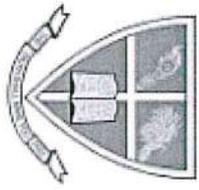
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This is to certify that the dissertation entitled "SPRAY DEPOSITED Ga₂O₃ THIN FILMS FOR UV DETECTOR APPLICATIONS" is a record of original work carried out by SALAHUNEESA T A under my supervision and guidance during 2019-2021 in the partial fulfilment of the requirement for the award of degree Master of Science in Physics under Mahatma Gandhi University, Kottayam.



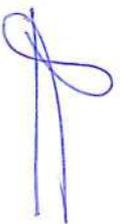
Ms. Rakhy Raphael
Assistant Professor,
Department of Physics
Union Christian College, Aluva

UNION CHRISTIAN COLLEGE



CERTIFICATE

This is to certify that the project entitled "A study on similarity score in fingerprint analysis using Matlab for biometric applications" is a bonafide work done by the candidate RIVA ROSE CHERIAN (190011019394) under my guidance and supervision at the Research centre of Department of Physics, U C College, Aluva, and this project was carried out in partial fulfillment of the requirement for the award of the degree of Master of Science in Physics.

Dr. Shinoj V.K.


Department of Physics

Union Christian College, Aluva

CHARACTERIZATION OF RARE EARTH DOPED NANOCRYSTALS

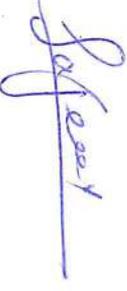
*A project report submitted to the Mahatma Gandhi University
in partial fulfillment of the requirements for the
award of the degree Master of Science in Physics.*



Submitted By

**DONNA SUSAN ABRAHAM
UNION CHRISTIAN COLLEGE
ALUVA**

Under the Guidance of
DR. SAJEEV U.S
Assistant Professor
Department of Physics
Government College Kottayam



AUGUST 2021

UNION CHRISTIAN COLLEGE



CERTIFICATE

This is to certify that the project entitled "Cesium Titanium (IV) Bromide Thin Films Based Stable Lead-Free Perovskites" is a bonafide work done by the candidate SACHIN S (190011019395) under my guidance and supervision at the Research centre of Department of Physics, U C College, Aluva, and this project was carried out in partial fulfillment of the requirement for the award of the degree of Master of Science in Physics.

Dr. Alex Mather

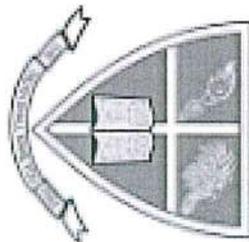
A handwritten signature in black ink, appearing to read "Alex Mather", is written over a horizontal line.

Head of the Department

Department of Physics

Union Christian College, Aluva

UNION CHRISTIAN COLLEGE



CERTIFICATE

This is to certify that the project entitled "Cesium Titanium (IV) Bromide Thin Films Based Stable Lead-Free Perovskites" is a bonafide work done by the candidate SOURAV K (190011019398) under my guidance and supervision at the Research centre of Department of Physics, U C College, Aluva, and this project was carried out in partial fulfillment of the requirement for the award of the degree of Master of Science in Physics.

Dr. Alex Mathew

A handwritten signature in black ink, which appears to read "Alex Mathew", is written over a horizontal line.

Head of the Department

Department of Physics

Union Christian College, Aluva

Union Christian College, Aluva

DEPARTMENT OF PHYSICS



CERTIFICATE

This is to certify that this project report entitled 'A study on characterization of aerosol black carbon using laser induced incandescence technique' is a bonafide record of the work done by Ms. Aiswarya PK for the partial fulfillment of the requirement for the award of the Degree of Master of Science in Physics under the Mahatma Gandhi University.

A handwritten signature in black ink, which appears to read "Alex Mathew", is written over a horizontal line.

Dr. Alex Mathew
Head of the Department
Department of Physics
Union Christian College,
Aluva

UNION CHRISTIAN COLLEGE



CERTIFICATE

This is to certify that the project entitled "PREPARATION AND CHARACTERIZATION OF HEMALITE AND SODIUM DOPED HEMALITE NANOSTRUCTURES" is a bonafide work done by the candidate FEBIYA RAJ DILEEP (19001109392) under my guidance and supervision at the Research centre of Department of Physics, U C college, Aluva and this project was carried out in partial fulfillment of the requirement for the award of the degree of Master of Science in Physics.

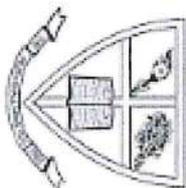

Dr. Rachel Raena Philip

Associate Professor

Department of Physics

Union Christian College, Aluva

UNION CHRISTIAN COLLEGE
ALUVA



Project Report on

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*Submitted in partial fulfillment
Of the requirements for the award of degree of*

MASTER OF SCIENCE
IN
PHYSICS
under

MAHATHMA GANDHI UNIVERSITY, KOTTAYAM
KERALA

By

ANU SANTHOSH
Reg No: 190011019387
Under the guidance of

Dr. PRAMOD DOMINIC
ASSISTANT PROFESSOR, DEPARTMENT OF PHYSICS
UNION CHRISTIAN COLLEGE ALUVA

A handwritten signature in black ink, appearing to be 'Anu Santhosh', written over a horizontal line.

CERTIFICATE

This is to certify that this project report entitled "REVIEW OF ENTROPY AND AREA" being submitted by STONU ALEX of Union Christian College, Aluva, M.G. University, in partial fulfillment for the award of the degree of Master of Science, is a bona fide record of the work carried out by her at Union Christian College, Aluva under my guidance and supervision.



DR. PRAMOD DOMINIC
ASSOCIATE PROFESSOR
DEPARTMENT OF PHYSICS
U. C. COLLEGE, ALUVA

ALUVA
10/03/2020

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CERTIFICATE

This is to certify that the project entitled "Synthesis and characterisation of Mn-doped MoS₂" is a bonafide work done by the candidate
GOKUL R(190011019393) under my guidance and supervision at the Research Centre of Department of Physics, U C College, Aluva, and this project was carried out in partial fulfilment of the requirement for the award of the degree of Master of Science in Physics.

Dr Rashmi R



Assistant Professor

Department of Physics

Union Christian College, Aluva

UNION CHRISTIAN COLLEGE



CERTIFICATE

This is to certify that the project entitled "Synthesis and characterisation of Mn-doped MoS₂" is a bonafide work done by the candidate ANAKHA ANNA JOBY (190011019386) under my guidance and supervision at the Research Centre of Department of Physics, U C College, Aluva, and this project was carried out in partial fulfilment of the requirement for the award of the degree of Master of Science in Physics.

Dr Reshmi R

Assistant Professor

A handwritten signature in black ink, appearing to read 'Reshmi', is written over a horizontal line.

Department of Physics

Union Christian College, Aluva

Dr. Shameer Khader, PhD
Senior Director
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<https://scholar.google.com/citations?user=XSh3WAAAAAJ&hl=en>



Also affiliated to: School of Public Health, Faculty of Medicine,
Imperial College of London
Level 2, Faculty Building, South Kensington Campus, London SW7 2AZ, UK
shameer.khader20@imperial.ac.uk

Certificate

I certify that the research work presented in this thesis title “**A Translational Bioinformatics Investigation of the Human Gut Microbiome and Hypertensive Diseases**” has been carried out by **Mr. Adarsh PP**, MSc Bioinformatics (2019-2021 batch; Union Christian College Aluva, Kerala); Registration no. 190011007936, under my supervision, and this is his bonafide work. The research work is original and has not been submitted for any other degree of this or any other university. Further, he has worked under my guidance throughout the project tenure (January 1st, 2021, to July 1st, 2021) until submitting the thesis to the Mahatma Gandhi University Kottayam, Kerala.

Dr. Shameer Khader

Senior Director, AstraZeneca

Date: August 2nd 2021

Place: Gaithersburg, MD

CERTIFICATE

This is to certify that Ms. Aleena Reetha Kuriakose, M.Sc. Bioinformatics (2nd year) student, Union Christian College, Aluva, Kerala has completed her project work entitled "**Network-based Computational Drug Repurposing for Pancreatic Cancer**" for the partial fulfilment of the requirement for the award of the Degree of Master of Science in Bioinformatics during the period from February 2021 to August 2021 under my supervision and guidance.

Date : 13/08/2021

Place : Cochin

D. Kannan

Dr. B. Kannan ,

Professor (Retired)

Department of Computer Applications

CUSAT



Department of Biosciences

UNION CHRISTIAN COLLEGE

(Affiliated to Mahatma Gandhi University)

Aluva, Kerala-683102

CERTIFICATE

This is to certify that the dissertation entitled "**NETWORK PHARMACOLOGY ANALYSIS ON ABELMOSCHUS MOSCHATUS, A COMMON AYURVEDIC HERB**" is a bonafide report work carried out by **ALTHAF MAHIN (REG NO: 190011007939)**, Union christian college Aluva, during the period of June to August 2021 in partial fulfilment of the award of degree **MASTER OF SCIENCE IN BIOINFORMATICS** of the Mahatma Gandhi University.

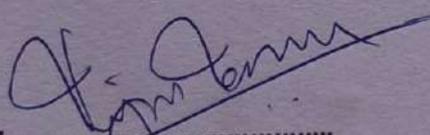

SHYAM MOHAN
Head of the Department
Bioinformatics
U.C. College, Aluva-2

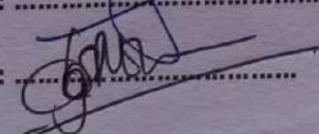
Head of the Department



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Examiner 1: 

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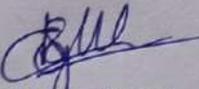
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Aluva, Kerala-683102

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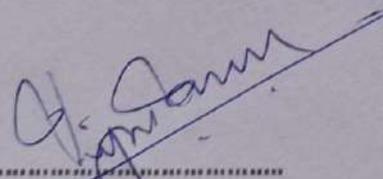
This is to certify that the dissertation entitled "**PREDICTION OF B-CELL EPITOPES FROM THE NUCLEOCAPSID PROTEIN OF SARS-COV2 COMBINING SEQUENCE BASED AND MOLECULAR DOCKING APPROACHES**" is a bonafide report work carried out by **ANJALI VASUDEVAN (REG NO: 190011007940)**, Union Christian college Aluva, during the period of June to August 2021 in partial fulfilment of the award of degree **MASTER OF SCIENCE IN BIOINFORMATICS** of the Mahatma Gandhi University.

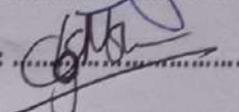

SHYAM MOHAN
Head of the Department
Bioinformatics
U.C. College, Aluva-2
Head of the Department



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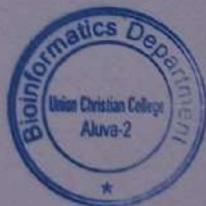
Alwaye, Kerala-683102

CERTIFICATE

This is to certify that the dissertation entitled "**COMPUTATIONAL ANALYSIS OF ANTI-BACTERIAL PROPERTIES OF PLANT COMPOUNDS EMPLOYING A COMPREHENSIVE STRUCTURE SIMILARITY SEARCH FOCUSED ON MYCOBACTERIUM TUBERCULOSIS**" is a bonafide record of the original dissertation work carried out by **ANJU GEORGE (REG NO:190011007941)**, Union christian college Aluva, during the period of April to July 2021 in partial fulfilment of the award of degree **MASTER OF SCIENCE IN BIOINFORMATICS** of the Mahatma Gandhi University.

SHYAM MOHAN
HOD, BIOSCIENCES DEPARTMENT
UNION CHRISTIAN COLLEGE, ALUVA

Head of the Department



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Department of Bioinformatics

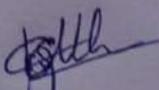
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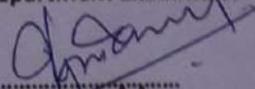
This is to certify that the dissertation entitled **RNA DEPENDENT RNA POLYMERASE GENE (RDRP GENE) OF SARS COV-2 VIRUS HAS ANY SIGNIFICANCE IN VARIANTS FOUND TILL DATE? A SEQUENCE ANALYSIS** is a bonafide record of the original dissertation work carried out by **ASWATHY S G (Reg No: 190011007942)**, Union christian college Aluva, during the period of June to august 2021 in partial fulfilment of the award of degree **MASTER OF SCIENCE IN BIOINFORMATICS** of the Mahatma Gandhi University.

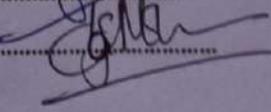

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Head of the Department
Bioinformatics
U.C. College, Aluva-2



Head of the Department Examiners:

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Alwaye, Kerala-683102

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This is to certify that the dissertation entitled "IN-SILICO MINING OF SIMPLE SEQUENCE REPEATS FROM EXPRESSED SEQUENCE TAGS (EST) IN *HELIANTHUS ANNUUS*" is a bonafide record of the original dissertation work carried out by **CHRISTY K ANTO (REG NO:190011007944)**, Union christian college Aluva, during the period of April to July 2021 in partial fulfilment of the award of degree MASTER OF SCIENCE IN BIOINFORMATICS of the Mahatma Gandhi University.

SHYAM MOHAN
HOD, BIOSCIENCES DEPARTMENT
UNION CHRISTIAN COLLEGE, ALUVA

Head of the Department



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This is to certify that the dissertation entitled “**Anticancer Properties of Dietary Compounds- A Molecular Docking Analysis Against Epidermal Growth Factor Receptor**” is a bonafide record of the original dissertation work carried out by **DIYA SANJEEV (REG NO:190011007945)**, Union Christian college Aluva, during the period of April to July 2021 in partial fulfillment of the award of degree **MASTER OF SCIENCE IN BIOINFORMATICS** of the Mahatma Gandhi University.

SHYAM MOHAN
Head of the Department
Bioinformatics
U.C. College, Aluva-2

Head of the Department



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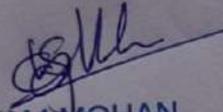
CHRISTIAN COLLEGE

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Alwaye, Kerala-683102

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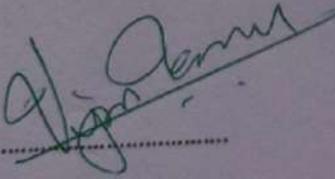
This is to certify that the dissertation entitled "IN SILICO STUDY ON THE MOLECULAR BASIS OF DRUG RESISTANCE AGAINST HIV PROTEASE INHIBITORS" is a Bonafede record of the original dissertation work carried out by JAYANTH M R (REG NO:190011007948), Union Christian college Aluva, during the period of April to July 2021 in partial fulfilment of the award of degree MASTER OF SCIENCE IN BIOINFORMATICS of the Mahatma Gandhi University.

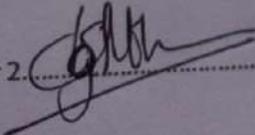

SHYAM MOHAN
Head of the Department
Bioinformatics
U.C. College, Aluva-2



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UNION CHRISTIAN COLLEGE
(Affiliated to Mahatma Gandhi University)
Aluva, Kerala-683102

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This is to certify that the dissertation entitled "*Role of dietary phytochemicals in targeted therapy of Alzheimer's disease: An in-silico approach*" is a bonafide record of the original dissertation work carried out by KIRAN K. S [RegNo:190011007950] Union christian college Aluva, during the period of April to July 2021 in partial fulfillment of the award of degree MASTER OF SCIENCE IN BIOINFORMATICS of the MahatmaGandhiUniversity.

SHYAM MOHAN
Head of the Department
Bioinformatics
U.C. College, Aluva-2
HeadoftheDepartment



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Department of Bioinformatics

**UNION CHRISTIAN COLLEGE (Affiliated to Mahatma Gandhi University) Alwaye,
Kerala-683102**

CERTIFICATE

This is to certify that the dissertation entitled **"EVOLUTION OF JELLYFISH PHYLOGENETIC ANALYSIS UTILIZING MITOCHONDRIAL GENOME"** is a bonafide record of the original dissertation work carried out by **MEENUKRISHNAN K.R. (REG NO: 190011007952)**, Union christian college Aluva, during the period of June to August 2021 in partial fulfilment of the award of degree **MASTER OF SCIENCE IN BIOINFORMATICS** of the Mahatma Gandhi University.

SHYAM MOHAN
Head of the Department
Bioinformatics
U.C. College, Aluva-2
Head of the Department



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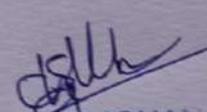
Department of Biosciences

UNION CHRISTIAN COLLEGE

(Affiliated to Mahatma Gandhi University, Kottayam)

Aluva, Kerala, India

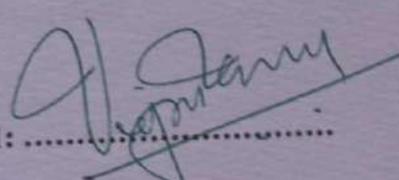
This is to certify that the dissertation entitled **“QUANTITATIVE STRUCTURE ACTIVITY RELATIONSHIPS STUDIES ON ANTI-INFLAMMATORY PROPERTIES OF PHYTOCHEMICALS”** is a bonafide record of the original dissertation work carried out by **RESHMA C JAMES (Reg. No: 190011007953)**, Union Christian College, Aluva, during the period of April to July 2021 in partial fulfilment of the award of degree **Master of Science in Bioinformatics** of the **MAHATMA GANDHI UNIVERSITY, KOTTAYAM.**

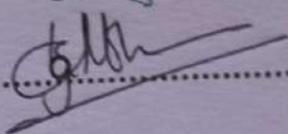

Head of the Department
Head of the Department
Bioinformatics
U.C. College, Aluva-2



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Examiners


Examiner 1:

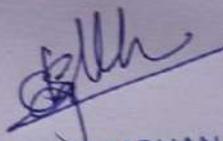

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Department of Bioinformatics
UNION CHRISTIAN COLLEGE
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Aluva, Kerala-683102

CERTIFICATE

This is to certify that the dissertation entitled "Bioinformatics analysis of B.1.617.2 SARS CoV-2 Variant" is a bonafide project work carried out by UMA S (REG NO: 190011007957), Union Christian College Aluva, during the period of May to August 2021 in partial fulfilment of the award of degree MASTER OF SCIENCE IN BIOINFORMATICS of the Mahatma Gandhi University.


SHYAM MOHAN
Head of the Department
Bioinformatics
U.C. College, Aluva-2
Head of the Department



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Department of Bioinformatics

UNION CHRISTIAN COLLEGE

(Affiliated to Mahatma Gandhi)

University) Aluva, Kerala-683102

CERTIFICATE

This is to certify that the dissertation entitled "*Computational Analysis of Anti-Leptospiral Properties of Plant Compounds Employing Structure and Analog Based Approaches*" is a bonafide record of the original dissertation work carried out by **VINEETHA SHAJI** [RegNo:190011007958] Union christian college Aluva, during the period of April to July 2021 in partial fulfillment of the award of degree MASTER OF SCIENCE IN BIOINFORMATICS of the Mahatma Gandhi University.

SHYAM MOHAN
Head of the Department
Bioinformatics
U.C. College, Aluva-2

Head of the Department



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E-mail: ucc@uccollege.edu.in

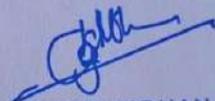


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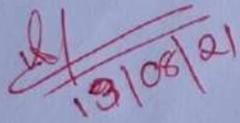
This is to certify that the thesis entitled “**EDIBLE COATING FOR FRESH FRUITS AND VEGETABLES WITH ALOE VERA GEL AND IT’S BIO-ACTIVE POTENTIAL**” is a bonafide record of original dissertation work carried out by Mr. **ABIN V. A.**, Union Christian College, Aluva during the period of April to June 2021 in partial fulfilment of the requirements for the award of Degree of Master of Science in Biotechnology, under the guidance of **Dr Sareen Sarah John**, Assistant Professor Department Of Bioscience, **UNION CHRISTIAN COLLEGE , ALUVA**

Internal guide 
Dr Sareen Sarah John




SHYAM MOHAN
HOD, BIOSCIENCES DEPARTMENT
UNION CHRISTIAN COLLEGE, ALUVA
Head of the Department

Examiners

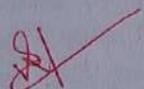
1. 
- 2.

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☎ 2604003, 2609194

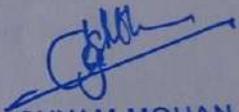


This is to certify that the thesis entitled **RAPD Marker for Genetic Variability Studies and Biochemical Evaluation in Mitragyna parvifolia (Roxb.) Korth.** is a bonafide record of original dissertation work carried out by **Ms.AKHILA AJI ..** Union Christian College, Aluva during the period of December to March 2021 conducted at **INSTITUTE OF FOREST GENETICS AND TREE BREEDING, COIMBATORE** in partial fulfilment of the requirements for the award of Degree of Master of Science in Biotechnology of the Mahatma Gandhi University.

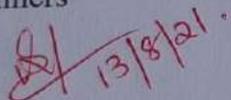
Internal guide 
Dr Sareen Sarah John

Head of the Department




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HOD, BIOSCIENCES DEPARTMENT
UNION CHRISTIAN COLLEGE, ALUVA

Examiners

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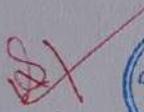
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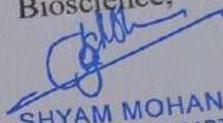
CERTIFICATE

This is to certify that the thesis entitled "**Insights of bioactive potential and GCMS Profile of Ethanolic and Aqueous extract of Leaf from the *Aerva lanata* (L.) plant**" is a bonafide record of original dissertation work carried out by Mr. **ASWIN KRISHNA.**, Union Christian College, Aluva during the period of April to June 2021 in partial fulfilment of the requirements for the award of Degree of Master of Science in Biotechnology, under the guidance of **Dr Sareen Sarah John**, Assistant Professor Department Of Bioscience, **UNION CHRISTIAN COLLEGE, ALUVA**

Internal guide

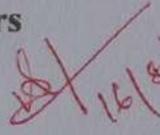

Dr Sareen Sarah John




SHYAM MOHAN
HOD, BIOSCIENCES DEPARTMENT
UNION CHRISTIAN COLLEGE, ALUVA

Head of the Department

Examiners

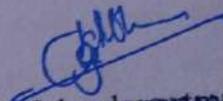
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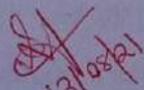
Certified bonafide record of the project-review report work "ISOLATION AND PCR BASED MOLECULAR IDENTIFICATION OF AMYLASE PRODUCING BACTERIA FROM DEGRADED TAPIOCA" during the period 2019-2021" is done by the candidate Chhaya Chandran (190011011709)

Certified bonafide record of the project-review report work "DEVELOPMENT OF MOLECULAR TOOLS FOR DIAGNOSIS OF ALZHEIMER'S DISEASE THAT ARE BASED ON AMYLOIDOGENIC PROTEINS " during the period 2019-2021" is done by the candidate Deepasree s kumar (190011011710) of final semester MSc. Biotechnology course in partial fulfilment for the award of Degree of Masters of Science in Biotechnology.




Head of the department
HOD, BIOSCIENCES DEPARTMENT
UNION CHRISTIAN COLLEGE, A

Internal Examiner : Dr. Sareen Sarah John


13/08/21

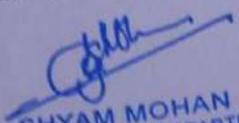
External Examiner :

CERTIFICATE

Certified bonafide record of the project-review report work **ISOLATION OF MEDICINAL PLANT CINCHONA USING DNA BARCODING** during the period 2019-2021" is done by the candidate **JESMI C.S.(190011011713)** of final semester MSc. Biotechnology course in partial fulfilment for the award of Degree of Masters of Science in Biotechnology.


Supervising Teacher




SHYAM MOHAN
HOD. BIOSCIENCES DEPARTMENT
UNION CHRISTIAN COLLEGE, ALUVA
Head of Department

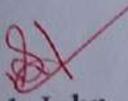
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ALUVA



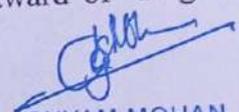
CERTIFICATE

This is to certify that the dissertation entitled "**DETECTION OF COVID-19 VIRUS ON SURFACES USING PHOTONICS: CHALLENGES AND PERSPECTIVES**" during the period 2019-2021" is done by the candidate, Krishna B.A (190011011714) of final semester MSc. Biotechnology course in partial fulfilment of the requirements for the award of Degree of Master of Science in Biotechnology is a bonafide record work carried out under my supervision. The contents of this report in full or parts have not been submitted to any other institute or university for the award of any degree or diploma.

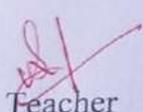

Dr. Sareen Sarah John
Assistant Professor
Union Christian College
Aluva, Ernakulam.

2021

Certified bonafide record of the project-review report work "EFFECT OF KAEMPFEROL ON EXPRESSION OF SNAIL GENES IN HUMAN COLORECTAL CANCER CELLS DLD" during the period 2019-2021" is done by the candidate NIDHUNA SAJI (190011011717) of final semester MSc. Biotechnology course in partial fulfilment for the award of Degree of Masters of Science in Biotechnology.

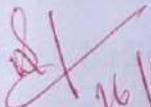
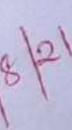

SHYAM MOHAN
HOD, BIOSCIENCES DEPARTMENT
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Head of Department


Supervising Teacher



Examiners

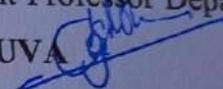
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E-mail: ucc@uccollege.edu.in

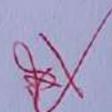


CERTIFICATE

This is to certify that the thesis entitled “**STUDY ON ANTIBACTERIAL, ANTIOXIDANT AND FLAVANOID CONTENT OF AQUEOUS EXTRACT OF PUNICA GRANATUM [POMEGRANTE] PEEL.**” is a bonafide record of original dissertation work carried out by Mr. **NIVED K M**, Union Christian College, Aluva during the period of April to June 2021 in partial fulfilment of the requirements for the award of Degree of Master of Science in Biotechnology, under the guidance of **Dr Sareen Sarah John**, Assistant Professor Department of Bioscience, **UNION CHRISTIAN COLLEGE, ALUVA**


SHYAM MOHAN
HOD, BIOSCIENCES DEPARTMENT
UNION CHRISTIAN COLLEGE, ALUVA

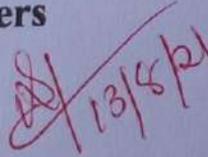
Internal guide


Dr Sareen Sarah John



Head of the Department

Examiners

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2.

Website : <http://ifgtb.icFRE.gov.in>
Fax : 91-0422-2430549

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E-mail : dir_ifgtb@icFRE.org



वन आनुवंशिकी एवं वृक्ष प्रजनन संस्थान

(भारतीय वानिकी अनुसंधान एवं शिक्षा परिषद)
(पर्यावरण एवं वन मंत्रालय, भारत सरकार का एक स्वायत्त विभाग)
पि.ओ.नं. 1061 रसेपुरम हपो 641 002 तमिऴनाडु, भारत



INSTITUTE OF FOREST GENETICS AND TREE BREEDING

INDIAN COUNCIL OF FORESTRY RESEARCH & EDUCATION

(An autonomous Body of Ministry of Environment & Forests, Govt. of India)
P.B. No. 1061, R.S. Puram HPO., Coimbatore - 641 002, Tamil Nadu, India

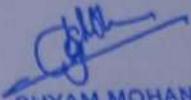
CERTIFICATE

This is to certify that the dissertation entitled "CHARECTERIZATION AND EVALUATION OF NATURAL PIGMENTS FROM RED SANDERS *PTEROCARPUS SANTALINUS* (BARK AND HEARTWOOD) FOR VARIOUS INDUSTRIAL APPLICATIONS" is a record of bonafied research work carried out by Ms. POOJA V P M.Se. Biotechnology student of Union Christian College, Aluva with my supervision and guidance from December 2020 to March 2021. No part of the dissertation has been submitted for the award of any degree, diploma, fellowship and similar titles.

Dr. N. Senthilkumar
Scientist -F & Head,
Chemistry and Bioprospecting Division,
Institute of Forest Genetics and Tree Breeding.

Certified bonafide record of the project-review report work "MULTIPLEX PCR ASSAY FOR THE DETECTION OF BACILLUS ENDOTOXIN GENE IN FOOD SAMPLES" during the period 2019-2021" is done by the candidate Safna T A (190011011720) of final semester MSc. Biotechnology course in partial fulfilment for the award of Degree of Masters of Science in Biotechnology.


Supervising Teacher


SHYAM MOHAN
HOD, BIOSCIENCES DEPARTMENT
UNION CHRISTIAN COLLEGE, ALUVA
Head of Department

Examiners

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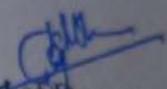
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Certified bonafide record of the project-review report work "THE OCCURRENCE OF NEURODEGENERATIVE DISORDERS- ALZHEIMER'S AND PARKINSON'S DISEASE during the period 2019-2021" is done by the candidate Sherin Shoji Varghese (190011011723) of final semester MSc. Biotechnology course in partial fulfilment for the award of Degree of Masters of Science in Biotechnology.

~~AS~~
Supervising Teacher


Head of Department
SHYAM MOHAN
HOD, BIOSCIENCES DEPARTMENT
UNION CHRISTIAN COLLEGE, ALUVA



Examiners

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~~AS~~
13/08/21

2

12th July 2021

CERTIFICATE

This is to certify that the dissertation entitled “ISOLATION AND MOLECULAR IDENTIFICATION OF LEAF BLIGHT CAUSING BACTERIA FROM LONG PEPPER LEAF AND ITS ACTIVITY AGAINST MEDICINAL PLANTS” is an authentic record of original research work done by Ms. VYSHNAVI PRADEEPAN (Reg No. 190011011724) student of M.Sc. Biotechnology, Union Christian College, Aluva under my supervision and guidance in Amplicon Biolabs, KINFRA, Kakkanchery, from April to June for the partial fulfillment of the requirement for the award of the **Degree of Master of Science in Biotechnology**. This dissertation in full or parts have not been submitted to any other institute or University for the award of any degree or diploma. Further it is certified that this dissertation represents an independent work done by the candidate under my supervision.



[Signature]
BIJNA K

Supervising Guide

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“BACTERIAL ENDOPHYTES AS NOVEL SOURCE OF DRUGS”



Dissertation submitted to Mahatma Gandhi University, Kottayam in partial

fulfilment of the requirements for the award of degree of

Master of Science in Botany

BY

PARVATHI S

M.Sc. Botany (2019-2021)

DEPARTMENT OF BOTANY

UNION CHRISTIAN COLLEGE, ALUVA

Valid

27/8/21

16/8/21

Dr. Binod P

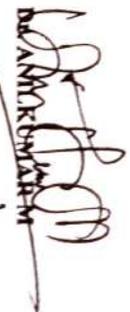
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Reg.No.190011008989

AUGUST 2021

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This is to certify that the dissertation entitled "**BACTERIAL ENDOPHYTES AS NOVEL SOURCE OF DRUGS**" submitted to Mahatma Gandhi University in partial fulfillment of the requirement for the award of degree of **Master of Science in Botany** is a record of original work done by **PARVATHI S, M.Sc. Botany (2019-21), Reg. no:190011008987** during the period of her study under my supervision and guidance and that it has not previously formed the basis for the award of any degree or fellowship or similar title to any candidate of any university.



Assistant Professor

Department of Botany

Aluva

UC College, Aluva

August 2021

"FUNGAL ENDOPHYTES AS NOVEL SOURCE OF DRUGS"



*Dissertation submitted to Mahatma Gandhi University, Kottayam in partial
fulfilment of the requirements for the award of degree of*

Master of Science in Botany

BY

ANJUMOL K S

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Reg.No: 190011008980

AUGUST 2021

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16/8/21

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This is to certify that the dissertation entitled '**FUNGAL ENDOPHYTES AS NOVEL SOURCE OF DRUGS**' submitted to Mahatma Gandhi University in partial fulfillment of the requirement for the award of degree of **Master of Science in Botany** is a record of original work done by **ANJUMOL K S** during the period of her study under my supervision and guidance and that it has not previously formed the basis for the award of any degree or fellowship or similar title to any candidate of any university.



DR. ANILKUMAR M

Assistant Professor

Aluva

Department of Botany

August 2021

Union Christian College

**“REVIEW ON INCREASING THE VASE LIFE OF CUT FLOWER
ROSE USING CHEMICALS AND NATURAL PRODUCTS”**



*Dissertation submitted to Mahatma Gandhi University, Kottayam In partial
fulfilment of the requirements for the award of degree of*

Master of Science in Botany

BY

ADHITHYAMOL R

M.Sc. Botany(2019-2021)

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16/8/21

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16/8/2021

Reg.No.190011008979

AUGUST 2021

CERTIFICATE

This is to certify that the dissertation entitled '**REVIEW ON INCREASING THE VASE LIFE OF CUT FLOWER ROSE USING CHEMICALS AND NATURAL PRODUCTS**' submitted to Mahatma Gandhi University in partial fulfillment of the requirement for the award of degree of **Master of Science in Botany** is a record of original work done by **ADHITHYAMOL R** during the period of her study under my supervision and guidance and that it has not previously formed the basis for the award of any degree or fellowship or similar title to any candidate of any university.



DR. MANJU M GEORGE

Assistant Professor

Aluva

Department of Botany

August 2021

Union Christian College

**"A PILOT STUDY ON THE PRODUCTION OF BIO-DEGRADABLE PLASTIC
FROM CASSAVA STARCH"**



*Dissertation submitted to Mahatma Gandhi University, Kottayam in partial
fulfillment of the requirements for the award of degree of*

Master of Science in Botany

BY

A S MISNA SHAJI

M.Sc. Botany (2019-2021)

DEPARTMENT OF BOTANY

UNION CHRISTIAN COLLEGE, ALUVA

Reg.No: 190011008978

AUGUST 2021

CERTIFICATE

This is to certify that the dissertation entitled 'A PILOT STUDY ON THE PRODUCTION OF BIO-DEGRADABLE PLASTIC FROM CASSAVA STARCH" submitted to Mahatma Gandhi University in partial fulfillment of the requirement for the award of degree of Master of Science in Botany is a record of original work done by A S MISNA SHAJI during the period of her study under my supervision and guidance and that it has not previously formed the basis for the award of any degree or fellowship or similar title to any candidate of any university.



A handwritten signature in black ink, appearing to read 'Anumol Jose', is written over a horizontal line. The signature is slanted upwards to the right.

Ms. ANUMOL JOSE

Assistant Professor

Department of Botany

Union Christian College

Aluva

**" PLANT RESOURCES FOR MUSICAL INSTRUMENTS AND
ACCESSORIES"**



*Dissertation submitted to Mahatma Gandhi University, Kottayam In partial
fulfillment of the requirements for the award of degree of*

Master of Science in Botany

BY

ATHIRA SUDHAKARAN

M.Sc. Botany (2019-2021)

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DEPARTMENT OF BOTANY

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AUGUST 2021

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Dr. JUSTIN R NAYAGAM

Assistant Professor

Department of Botany

Union Christian College

Aluva

August 2021
~~April 2021~~

V

21

**REVIEW ON PLANT ALLELOCHEMICALS AND THEIR ROLE
IN CROP INDUSTRY**



**DISSERTATION SUBMITTED TO
MAHATMA GANDHI UNIVERSITY, KOTTAYAM**

**IN PARTIAL FULFILMENT FOR THE REQUIREMENTS FOR THE
DEGREE OF MASTER OF SCIENCE**

**IN
BOTANY**

**BY
DAYA REMESH**

**M.Sc. BOTANY (2019 – 21)
DEPARTMENT OF BOTANY**

**UNION CHRISTIAN COLLEGE, ALWAYE – 683102
KERALA, INDIA**

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UNION CHRISTIAN COLLEGE

(Affiliated to MG University)

Alwaye-2 Ernakulam (District) Kerala, India

Accredited at A level by the National Assessment and Accreditation Council (NAAC)

CERTIFICATE

This is to certify that the Dissertation entitled "**Review On Plant Allelochemicals And Their Role In Crop Industry**" submitted to Mahatma Gandhi University in partial fulfillment of the requirement for the award of degree of Master of science in Botany is a record of review work done by **Daya Remesh**, M.Sc. Botany (2019 - 2021), **Reg. no: 190011008984** during the period of her study under my supervision and guidance and that it has not previously formed the basis for the award of any degree or fellowship or similar titles of university.

Aluva

August, 2021

UC College, Aluva

Dr. Reshmi G R
Guest Lecturer,
Department of Botany

**“A STUDY ON THE ARCHITECTURE OF COMPOUND LEAVES IN
SELECTED PLANT SPECIES”**



*Dissertation submitted to Mahatma Gandhi University, Kottayam In partial
fulfillment of the requirements for the award of degree of*

Master of Science in Botany

BY

ARYAMOL K S

M.Sc. Botany(2019-2021)

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This is to certify that the dissertation entitled '**A STUDY ON THE ARCHITECTURE OF COMPOUND LEAVES IN SELECTED PLANT SPECIES**' submitted to Mahatma Gandhi University in partial fulfillment of the requirement for the award of degree of **Master of Science in Botany** is a record of original work done by ARYAMOL KS during the period of her study under my supervision and guidance and that it has not previously formed the basis for the award of any degree or fellowship or similar title to any candidate of any university.



Ms. ANUMOL JOSE

Assistant Professor

Department of Botany

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Aluva

April 2021

**" REVIEW ON WITHANIA SOMNIFERA AS IMMUNEBOOSTER
AGAINST COVID- 19 AND ITS OTHER THERAPEUTIC EFFECTS "**



*Dissertation submitted to Mahatma Gandhi University, Kottayam In partial
fulfillment of the requirements for the award of degree of*

Master of Science in Botany

BY

GEETHIKA

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AUGUST 2021

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This is to certify that the dissertation entitled "REVIEW ON WITHANIA SOMNIFERA AS IMMUNE BOOSTER AGAINST COVID 19 AND ITS OTHER THERAPEUTIC EFFECTS" submitted to Mahatma Gandhi University in partial fulfillment of the requirement for the award of degree of **Master of Science in Botany** is a record of original work done by GEETHIKA . During the period of her study under my supervision and guidance and that it has not previously formed the basis for the award of any degree or fellowship or similar title to any candidate of any university.



Dr. THARA K SIMON

Associate Professor

Department of Botany

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Aluva

April 2020

**“REVIEW ON INCREASING THE VASE LIFE OF CUT FLOWER
ORCHIDS USING CHEMICAL AND NATURAL PRODUCTS”**



*Dissertation submitted to Mahatma Gandhi University, Kottayam In partial
fulfillment of the requirements for the award of degree of*

Master of Science in Botany

BY

NAVYA JOSEPH

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UNION CHRISTIAN COLLEGE, ALUVA

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Reg.No. 190011008986

AUGUST 2021

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This is to certify that the dissertation entitled "**REVIEW ON INCREASING THE VASE LIFE OF CUT FLOWER ORCHIDS USING CHEMICAL AND NATURAL PRODUCTS**" submitted to Mahatma Gandhi University in partial fulfillment of the requirement for the award of degree of **Master of Science in Botany** is a record of original work done by NAVYA JOSEPH during the period of her study under my supervision and guidance and that it has not previously formed the basis for the award of any degree or fellowship or similar title to any candidate of any university.



Dr. MANJU M GEORGE

Assistant Professor

Department of Botany

Union Christian College

Aluva

AUGUST 2021

" PLANTS IN RELATION TO ART FORMS OF KERALA "



*Dissertation submitted to Mahatma Gandhi University, Kottayam In partial
fulfillment of the requirements for the award of degree of*

Master of Science in Botany

BY

SREELAKSHMI. E. S.

M.Sc. Botany (2019-2021)

DEPARTMENT OF BOTANY

UNION CHRISTIAN COLLEGE, ALUVA

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AUGUST 2021

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This is to certify that the dissertation entitled '**PLANTS IN RELATION TO ART FORMS OF KERALA** ' submitted to Mahatma Gandhi University in partial fulfillment of the requirement for the award of degree of **Master of Science in Botany** is a record of original work done by SREELAKSHMI. E.S during the period of her study under my supervision and guidance and that it has not previously formed the basis for the award of any degree or fellowship or similar title to any candidate of any university.



Dr. JUSTIN R NAYAGAM

Assistant Professor

Department of Botany

Union Christian College

Aluva
August
~~April~~ 2021

REVIEW ON COMMON ALLELOPATHIC WEEDS AND THEIR ENVIRONMENTAL RISK EVALUATION



**DISSERTATION SUBMITTED TO
MAHATMA GANDHI UNIVERSITY, KOTTAYAM**

**IN PARTIAL FULFILMENT FOR THE REQUIREMENTS FOR THE
DEGREE OF**

MASTER OF SCIENCE

IN

BOTANY

BY

SUMAN GEORGE

M.Sc. BOTANY (2019 – 21)

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KERALA, INDIA

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16/8/21

Reg. No:190011008990

August, 2021



UNION CHRISTIAN COLLEGE

(Affiliated to MG University)

Alwaye-2 Ernakulam (District) Kerala, India

Accredited at A level by the National Assessment and Accreditation Council (NAAC)

CERTIFICATE

This is to certify that the Dissertation entitled “Review on common allelopathic weeds and their environmental risk evaluation” submitted to Mahatma Gandhi University in partial fulfillment of the requirement for the award of degree of Master of science in Botany is a record of review work done by **Suman George**, M.Sc. Botany (2019 - 2021), Reg no: 190011008990 during the period of her study under my supervision and guidance and that it has not previously formed the basis for the award of any degree or fellowship or similar titles of university.

Aluva

August, 2021


for **Dr. Reshmi G R**
Guest Lecturer,
Department of Botany
UC College, Aluva

**" A REVIEW ON TINOSPORA CORDIFOLIA AS IMMUNEBOOSTER
AGAINST COVID- 19 AND ITS OTHER THERAPEUTIC EFFECTS "**



*Dissertation submitted to Mahatma Gandhi University, Kottayam In partial
fulfillment of the requirements for the award of degree of*

Master of Science in Botany

BY

SHERIN SEBASTIAN

M.Sc. Botany (2019-2021)

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UNION CHRISTIAN COLLEGE, ALUVA

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Reg. No. 190011008988

AUGUST 2021

CERTIFICATE

This is to certify that the dissertation entitled '*A REVIEW ON TINOSPORA CORDIFOLIA AS IMMUNOBOOSTER AGAINST COVID 19 AND ITS OTHER THERAPEUTIC EFFECTS*' submitted to Mahatma Gandhi University in partial fulfillment of the requirement for the award of degree of **Master of Science in Botany** is a record of original work done by **SHERIN SEBASTIAN**. During the period of her study under my supervision and guidance and that it has not previously formed the basis for the award of any degree or fellowship or similar title to any candidate of any university.



Dr. THARA K SIMON

Associate Professor

Department of Botany

Union Christian College

Aluva

April 2021