Department of Economics

SOCIO-ECONOMIC CONDITION OF TRIBAL COMMUNITY IN SAASTHAM COLONY

Dissertation Submitted to

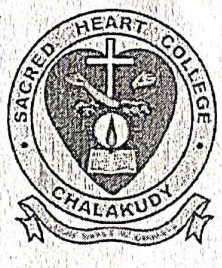
University of Calicut

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

BACHELOR OF ARTS IN ECONOMICS

By

ALITT ROSE K.D
Reg. No: SHAUAECR01



Department of Economics
Sacred Heart College
Chalakudy, Thrissur

CERTIFICATE

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Supervising Teacher

Dr. Shirley Jose K
Associate Professor & Head
Department of Economics
Sacred Heart College, Chalakudy

DEPT. OF ECONOMICS CHALAKUDY 680 307 SACRED HEART COLLEGE

Place: Chalakudy
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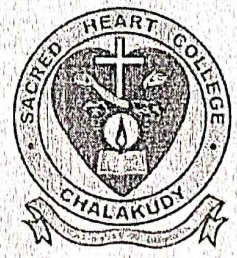
ADHEENA T.T
Reg. No: SHAUAECR02



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Associate Professor & Head
Department of Economics
Sacred Heart College, Chalakudy

DEPT. OF ECONOMICS
CHALAKUDY
680 307
SACRED HEART COLLEGE

Place: Chalakudy
Date: 31 March 2023

THE SOCIO-ECONOMIC CONDITIONS OF FARMERS IN ANNAMANADA PANCHAYAT

Dissertation Submitted to

University of Calicut

In partial fulfillment of the requirements

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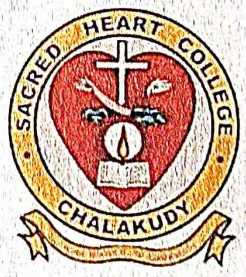
By

ALINA P.J

Reg. No: SHAUAECR03



Department of Economics

Sacred Heart College

Chalakudy, Thrissur

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Dr. Shirley Jose K
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Department of Economics
Sacred Heart College, Chalakudy

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By

ANCY JOY
Reg. No: SHAUAECR05

Department of Economics
Sacred Heart College
Chalakudy, Thrissur

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Supervising Teacher

Dr. Shirley Jose K
Associate Professor & Head
Department of Economics
Sacred Heart College, Chalakudy

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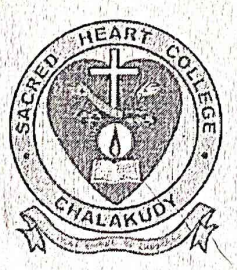
ANLIYA JOY
Reg. No: SHAUAECR08



Department of Economics
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Shirley K.J

Dr. Shirley Jose K

Associate Professor & Head

Department of Economics

Sacred Heart College, Chalakudy

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CONSUMER PREFERENCE TOWARDS ONLINE SHOPPING

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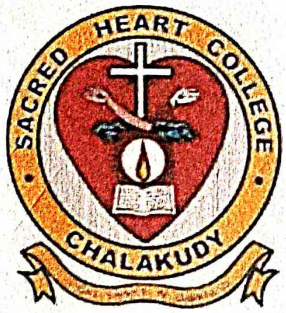
ANN MARIYA PAUL P

Reg. No: SHAUAECR09



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Sacred Heart College

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Department of Economics
Sacred Heart College, Chalakudy

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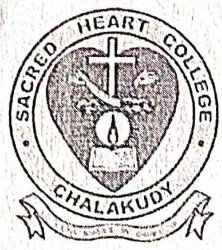
By

ARATHY KRISHNA V
Reg. No: SHAUAECR11



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Supervising Teacher

Dr. Shirley Jose K
Associate Professor & Head
Department of Economics
Sacred Heart College, Chalakudy

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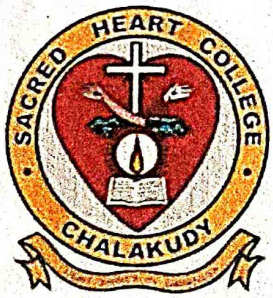
ARCHANA P.D

Reg. No: SHAUAECR12



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Associate Professor & Head
Department of Economics
Sacred Heart College, Chalakudy

DEPT. OF ECONOMICS ★ CHALAKUDY 680 307 ★ SACRED HEART COLLEGE

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A CASE STUDY ON PADDY CULTIVATION

Dissertation Submitted to

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In partial fulfillment of the requirements for

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By

ARYA KS

Reg. No: SHAUAECR13

Department of Economics

Sacred Heart College

Chalakudy, Thrissur

CERTIFICATE

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Supervising Teacher

Mr. Nijil Jacobi
Assistant Professor
Department of Economics
Sacred Heart College, Chalakudy

Place: Chalakudy
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A STUDY BASED ON FESTIVAL VENDING IN THE CHALAKUDY, KORATTY AND VARAKARA REGIONS OF THE THRISSUR DISTRICT

Dissertation Submitted to

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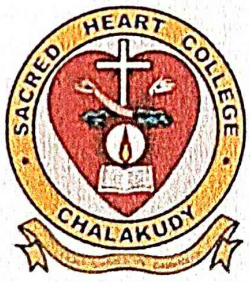
By

ARYALAKSHMI M.N.
Reg. No: SHAUAECR14



Department of Economics
Sacred Heart College
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Supervising Teacher

Mr. Nijil Jacobi
Assistant Professor
Department of Economics
Sacred Heart College, Chalakudy

DEPT. OF ECONOMICS
CHALAKUDY
680 307
SACRED HEART COLLEGE

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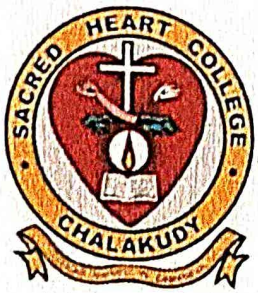

Department of Economics
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Supervising Teacher

DEPT. OF ECONOMICS
CHALAKUDY
680 307
SACRED HEART COLLEGE

Mr. Nijil Jacobi
Assistant Professor
Department of Economics
Sacred Heart College, Chalakudy

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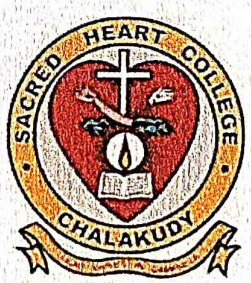
AVANI K.R.
Reg. No: SHAUAECR16



Department of Economics
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Supervising Teacher

Mr. Nijil Jacobi
Assistant Professor
Department of Economics
Sacred Heart College, Chalakudy

DEPT. OF ECONOMICS
CHALAKUDY
680 307
SACRED HEART COLLEGE

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CONSUMER PREFERENCE TOWARDS ONLINE SHOPPING

Dissertation Submitted to

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

BACHELOR OF ARTS IN ECONOMICS

By

DEENA C.J

Reg. No: SHAUAECR17

Department of Economics

Sacred Heart College

Chalakudy, Thrissur

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Supervising Teacher

Dr. Shirley Jose K
Associate Professor & Head
Department of Economics
Sacred Heart College, Chalakudy

Place: Chalakudy
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A STUDY ON CONSUMER SATISFACTION TOWARDS MOBILE BANKING APPLICATIONS

Dissertation Submitted to

University of Calicut

In partial fulfillment of the requirements
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By

DHIYA DEVASSY
SHAUAECR18

Department of Economics
Sacred Heart College
Chalakudy, Thrissur

CERTIFICATE

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Supervising Teacher

DEPT. OF ECONOMICS CHALAKUDY 680 307 SACRED HEART COLLEGE

Ms. Anju P B
Assistant Professor(on contract)
Department of Economics
Sacred Heart College, Chalakudy

Place:Chalakudy
Date: 31 March 2023

"A STUDY ON EMPLOYEE SATISFACTION AMONG THE EMPLOYEES OF KRIPA BONE INDUSTRY ANNALLUR KERALA"

Dissertation Submitted to

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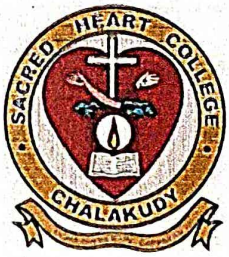
By

DINCY DAVIS

Reg. No: SHAUAECR19



Department of Economics
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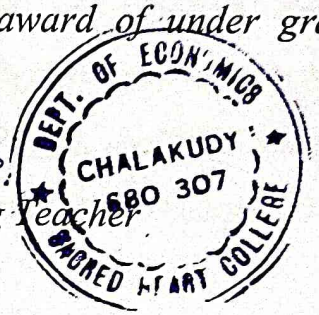

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Assistant Professor (on contract)
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Sacred Heart College, Chalakudy

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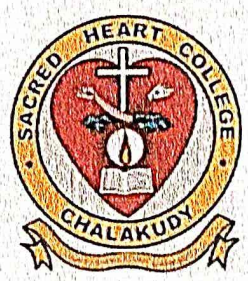
By

DONA FRANCIS
SHAUAECR20



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Assistant Professor(on contract)
Department of Economics
Sacred Heart College, Chalakudy

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By

FASNA K .T

Reg. No: SHAUAECR21

Department of Economics

Sacred Heart College

Chalakudy, Thrissur

CERTIFICATE

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Supervising Teacher

Mr. Nijil Jacobi
Assistant Professor
Department of Economics
Sacred Heart College, Chalakudy

DEPT. OF ECONOMICS
CHALAKUDY
680 307
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By

HRIDYA M
Reg. No: SHAUAECR22

Department of Economics
Sacred Heart College
Chalakudy, Thrissur

CERTIFICATE

This is to certify that the project report entitled " A CASE STUDY ON PADDY CULTIVATION" is a bonafide work carried out by HRIDYA M (Reg. No: SHAUAECR22) under my supervision and guidance during 2022-23 in partial fulfillment of the requirements for the award of under graduate degree in economics.

DEPT. OF ECONOMICS
CHALAKUDY
680 307
SACRED HEART COLLEGE

Supervising Teacher

Mr. Nijil Jacobi
Assistant Professor
Department of Economics
Sacred Heart College, Chalakudy

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By

JILSHA K.J.
Reg. No: SHAUAECR23



Department of Economics
Sacred Heart College
Chalakudy, Thrissur

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Supervising Teacher

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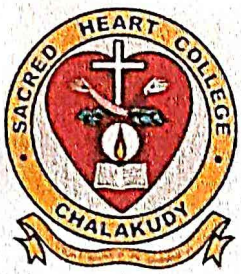

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Sacred Heart College

Chalakudy, Thrissur

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Assistant Professor
Department of Economics
Sacred Heart College, Chalakudy

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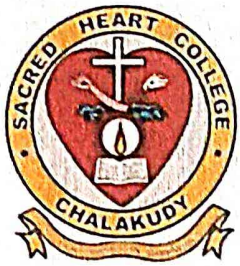
KAVYA P.S.
Reg. No: SHAUAECR25



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Mr. Nijil Jacobi
Assistant Professor
Department of Economics
Sacred Heart College, Chalakudy

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BACHELOR OF ARTS IN ECONOMICS

By

KEERTHANA K.D

Reg. No: SHAUAECR26

Department of Economics

Sacred Heart College

Chalakudy, Thrissur

CERTIFICATE

This is to certify that the project report entitled **"EMPLOYEE SATISFACTION AMONG THE EMPLOYEES OF KRIPA BONE INDUSTRY"** *is a bonafide work carried out by* **KEERTHANA K.D** ***(Reg. No:*** **SHAUAECR26***) under my supervision and guidance during 2022-23 in partial fulfillment of the requirements for the award of under graduate degree in economics.*



Supervising Teacher

Ms. Anju P B
Assistant Professor (on contract)
Department of Economics
Sacred Heart College, Chalakudy

Place: Chalakudy
Date: 31 March 2023

"A STUDY ON EMPLOYEE SATISFACTION AMONG THE EMPLOYEES OF KRIPA BONE INDUSTRY ANNALLUR KERALA"

Dissertation Submitted to

University of Calicut

In partial fulfillment of the requirements

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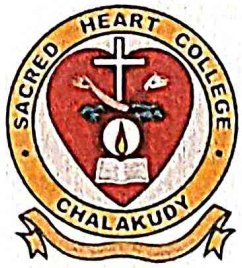
BACHELOR OF ARTS IN ECONOMICS

By

LAKSHMI C.R

Reg. No: SHAUAECR27



Department of Economics

Sacred Heart College

Chalakudy, Thrissur

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Supervising Teacher

Ms. Anju P B
Assistant Professor (on contract)
Department of Economics
Sacred Heart College, Chalakudy

Place: Chalakudy
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A STUDY BASED ON FESTIVAL VENDING IN THE CHALAKUDY, KORATTY AND VARAKARA REGIONS OF THE THRISSUR DISTRICT

Dissertation Submitted to

University of Calicut

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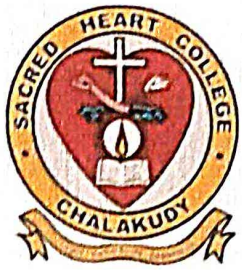
By

MARIYA XAVY
Reg. No: SHAUAECR28



Department of Economics
Sacred Heart College
Chalakudy, Thrissur

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Supervising Teacher

Mr. Nijil Jacobi
Assistant Professor
Department of Economics
Sacred Heart College, Chalakudy

DEPT. OF ECONOMICS
CHALAKUDY
680 307
SACRED HEART COLLEGE

Place: Chalakudy
Date: 31 March 2023

A CASE STUDY ON PADDY CULTIVATION

Dissertation Submitted to

University of Calicut

In partial fulfillment of the requirements for
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BACHELOR OF ARTS IN ECONOMICS

By

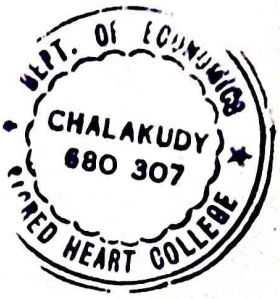
MEENAKSHY.K.S
Reg. No: SHAUAECR29

Department of Economics
Sacred Heart College
Chalakudy, Thrissur

CERTIFICATE

This is to certify that the project report entitled ***"A CASE STUDY ON PADDY CULTIVATION"*** *is a bonafide work carried out by* MEENAKSHY.K.S***(Reg. No: SHAUAECR29)*** *under my supervision and guidance during 2022-23 in partial fulfillment of the requirements for the award of under graduate degree in economics.*

Supervising Teacher



Mr. Nijil Jacobi
Assistant Professor
Department of Economics
Sacred Heart College, Chalakudy

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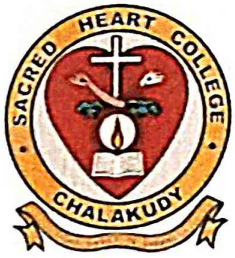
By

NANDANA SANTHOSH

Reg. No: SHAUAECR31



Department of Economics

Sacred Heart College

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Supervising Teacher

Ms. Anju P B
Assistant Professor (on contract)
Department of Economics
Sacred Heart College, Chalakudy

Place: Chalakudy
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THE SOCIO-ECONOMIC CONDITIONS OF FARMERS IN ANNAMANADA PANCHAYAT

Dissertation Submitted to

University of Calicut

In partial fulfillment of the requirements

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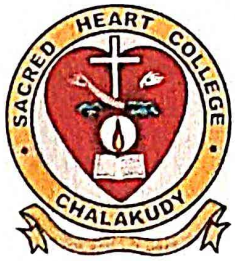
By

NIMMU DAVIS

Reg. No: SHAUAECR32



Department of Economics

Sacred Heart College

Chalakudy, Thrissur

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Supervising Teacher

Dr. Shirley Jose K
Associate Professor & Head
Department of Economics
Sacred Heart College, Chalakudy

Place: Chalakudy
Date: 31 March 2023

GROWTH AND SEASONALITY OF TOURIST ARRIVALS AT ATHIRAPPILLY-VAZHACHAL ECOTOURISM DESTINATION

Dissertation Submitted to

University of Calicut

In partial fulfillment of the requirements

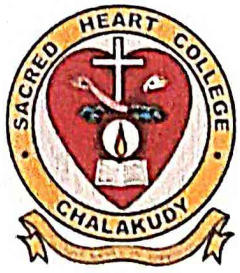
for the award of degree of

BACHELOR OF ARTS IN ECONOMICS

By

NITHYA THOMMY

Reg. No: SHAUAECR33



Department of Economics

Sacred Heart College

Chalakudy, Thrissur

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Supervising Teacher

Mr. Nijil Jacobi
Assistant Professor
Department of Economics
Sacred Heart College, Chalakudy

Place: Chalakudy
Date: 31 March 2023

A STUDY ON CONSUMER SATISFACTION TOWARDS MOBILE BANKING APPLICATIONS

Dissertation Submitted to

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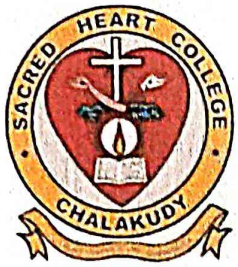
By

PRESTEENA SHIVON PEREIRA

SHAUAECR34



Department of Economics

Sacred Heart College

Chalakudy, Thrissur

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Supervising Teacher

DEPT. OF ECONOMICS
CHALAKUDY
680 307
SACRED HEART COLLEGE

Ms. Anju P B
Assistant Professor(on contract)
Department of Economics
Sacred Heart College, Chalakudy

Place:Chalakudy
Date: 31 March 2023

SOCIO-ECONOMIC CONDITION OF TRIBAL COMMUNITY IN SAASTHAM COLONY

Dissertation Submitted to

University of Calicut

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

BACHELOR OF ARTS IN ECONOMICS

By

SANDRA K.J
Reg. No: SHAUAECR36

Department of Economics
Sacred Heart College
Chalakudy, Thrissur

CERTIFICATE

This is to certify that the project report entitled ***"SOCIO-ECONOMIC CONDITION OF TRIBAL COMMUNITY IN SAASTHAM COLONY"*** *is a bonafide work carried out by* ***SANDRA K.J (Reg. No: SHAUAECR36)*** *under my supervision and guidance during 2022-23 in partial fulfillment of the requirements for the award of under graduate degree in economics.*

Supervising Teacher

Shirley K.J

Dr. Shirley Jose K
Associate Professor & Head
Department of Economics
Sacred Heart College, Chalakudy

DEPT. OF ECONOMICS
CHALAKUDY
680 307
BAORED COLLEGE

Place: Chalakudy
Date: 31 March 2023

THE SOCIO-ECONOMIC CONDITIONS OF FARMERS IN ANNAMANADA PANCHAYAT

Dissertation Submitted to

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In partial fulfillment of the requirements

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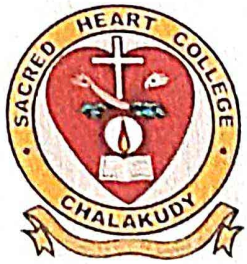
By

SANDRA K.S

Reg. No: SHAUAECR37



Department of Economics

Sacred Heart College

Chalakudy, Thrissur

CERTIFICATE

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Supervising Teacher

Dr. Shirley Jose K
Associate Professor & Head
Department of Economics
Sacred Heart College, Chalakudy

Place: Chalakudy
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By

SANGEETHA BIJU

Reg. No: SHAUAECR38

Department of Economics

Sacred Heart College

Chalakudy, Thrissur

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Supervising Teacher

Dr. Shirley Jose K
Associate Professor & Head
Department of Economics
Sacred Heart College, Chalakudy

DEPT. OF ECONOMICS CHALAKUDY 680 307 SACRED HEART COLLEGE

Place: Chalakudy
Date: 31 March 2023

A STUDY ON CONSUMER SATISFACTION TOWARDS MOBILE BANKING APPLICATIONS

Dissertation Submitted to

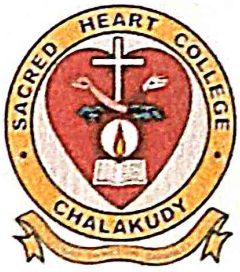
University of Calicut

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

BACHELOR OF ARTS IN ECONOMICS

By

SANIKA C.K
SHAUAECR39



Department of Economics
Sacred Heart College
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Supervising Teacher

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CHALAKUDY
680 307
SACRED HEART COLLEGE

Ms. Anju P B
Assistant Professor(on contract)
Department of Economics
Sacred Heart College, Chalakudy

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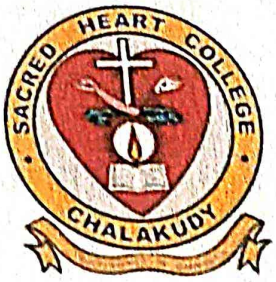
By

SEREENA XAVIER
SHAUAECR40



Department of Economics
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Supervising Teacher

DEPT. OF ECONOMICS CHALAKUDY 680 307 SACRED HEART COLLEGE

Ms. Anju P B
Assistant Professor(on contract)
Department of Economics
Sacred Heart College, Chalakudy

Place:Chalakudy
Date: 31 March 2023

GROWTH AND SEASONALITY OF TOURIST ARRIVALS AT ATHIRAPPILLY-VAZHACHAL ECOTOURISM DESTINATION

Dissertation Submitted to

University of Calicut

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

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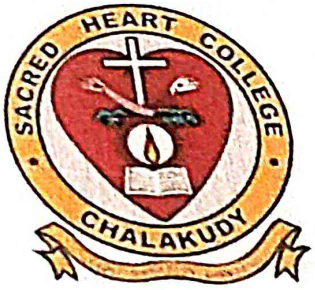
By

SHINCY DAVIS
Reg. No: SHAUAECR41



Department of Economics
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Mr. Nijil Jacobi
Assistant Professor
Department of Economics
Sacred Heart College, Chalakudy

Place: Chalakudy
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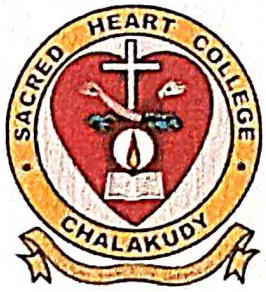
By

SIVA GANGA S MENON
Reg. No: SHAUAECR42



Department of Economics
Sacred Heart College
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Supervising Teacher

Mr. Nijil Jacobi
Assistant Professor
Department of Economics
Sacred Heart College,
Chalakudy

DEPT. OF ECON
CHALAKUDY
680 307
SACRED HEART COLLE

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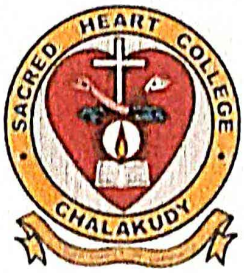
By

SNEHA C.S
SHAUAECR43



Department of Economics
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Supervising Teacher

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CHALAKUDY
680 307
SACRED HEART COLLEGE

Ms. Anju P B
Assistant Professor(on contract)
Department of Economics
Sacred Heart College, Chalakudy

Place:Chalakudy
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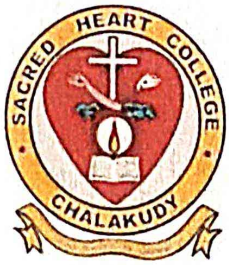
Reg. No: SHAUAECR44



Department of Economics

Sacred Heart College

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Supervising Teacher

Dr. Shirley Jose K
Associate Professor & Head
Department of Economics
Sacred Heart College, Chalakudy

DEPT. OF ECONOMICS CHALAKUDY 680 307 SACRED HEART COLLEGE

Place: Chalakudy
Date: 31 March 2023

CONSUMER PREFERENCE TOWARDS ONLINE SHOPPING

Dissertation Submitted to

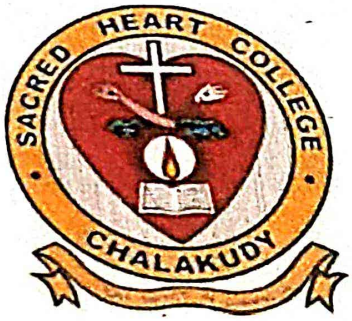
University of Calicut

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

BACHELOR OF ARTS IN ECONO

By

SONA PAULSON
Reg. No: SHAUAECR45



Department of Economics
Sacred Heart College
Chalakudy, Thrissur

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Supervising Teacher

Dr. Shirley Jose K
Associate Professor & Head
Department of Economics
Sacred Heart College, Chalakudy

DEPT. OF ECONOMICS CHALAKUDY 680 307 SACRED HEART COLLEGE

Place: Chalakudy
Date: 31 March 2023

GROWTH AND SEASONALITY OF TOURIST ARRIV
AT ATHIRAPPILLY-VAZHACHAL
ECOTOURISM DESTINATION

Dissertation Submitted to

University of Calicut

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By

SWATHY K S
Reg. No: SHAUAECR46

Department of Economics
Sacred Heart College
Chalakudy, Thrissur

CERTIFICATE

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Supervising Teacher

Mr. Nijil Jacobi
Assistant Professor
Department of Economics
Sacred Heart College, Chalakudy

DEPT. OF ECONOMICS
CHALAKUDY
680 307
SACRED HEART COLLEGE

Place: Chalakudy
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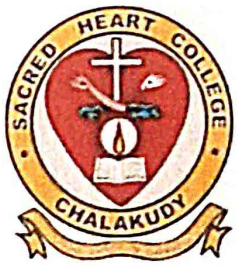
By

THASNEHA C.B

Reg. No: SHAUAECR47



Department of Economics

Sacred Heart College

Chalakudy, Thrissur

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Supervising Teacher

Dr. Shirley Jose K
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Department of Economics
Sacred Heart College, Chalakudy

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By

VAISHNA T V

Reg. No: SHAUAECR48



Department of Economics

Sacred Heart College

Chalakudy, Thrissur

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Supervising Teacher

Mr. Nijil Jacobi
Assistant Professor
Department of Economics
Sacred Heart College, Chalakudy

DEPT. OF ECONOMICS
CHALAKUDY
680 307
SACRED HEART COLLEGE

Place: Chalakudy
Date: 31 March 2023

GROWTH AND SEASONALITY OF TOURIST ARRIVALS AT ATHIRAPPILLY-VAZHACHAL ECOTOURISM DESTINATION

Dissertation Submitted to

University of Calicut

In partial fulfillment of the requirements

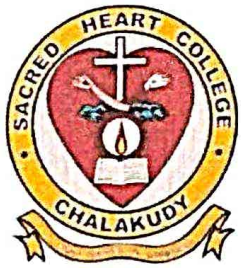
for the award of degree of

BACHELOR OF ARTS IN ECONOMICS

By

VIDYA K N

Reg. No: SHAUAECR49



Department of Economics

Sacred Heart College

Chalakudy, Thrissur

CERTIFICATE

This is to certify that the project report entitled ***"GROWTH AND SEASONALITY OF TOURIST ARRIVALS AT ATHIRAPPILLY-VAZHACHAL ECOTOURISM DESTINATION"*** *is a bonafide work carried out by* ***VIDYA K N (Reg. No: SHAUAECR49)*** *under my supervision and guidance during 2022-23 in partial fulfillment of the requirements for the award of under graduate degree in economics.*

Supervising Teacher

DEPT. OF ECON. MICB
CHALAKUDY
680 307
SACRED HEART COLLEGE

Mr. Nijil Jacobi
Assistant Professor
Department of Economics
Sacred Heart College, Chalakudy

Place: Chalakudy
Date: 31 March 2023

SOCIO-ECONOMIC CONDITION OF RETURN EMIGRANTS FROM GULF COUNTRIES AMIDST PANDEMIC: A CASE STUDY OF PONNANI TALUK, MALAPPURAM

BY

ANUSREE K S

REGISTER NO: SHAVMEC001

YEAR: 2023

PROJECT REPORT

Submitted to

UNIVERSITY OF CALICUT

In partial fulfillment of the requirement for the award of degree of

MASTER OF ARTS IN ECONOMICS



DEPARTMENT OF ECONOMICS

SACREAD HEART COLLEGE

CHALAKUDY

Valued by Anuse. K S
2/8/23

CERTIFICATE

This is to certify that the project report "Socio-Economic Condition of Return Emigrants from Gulf Countries Amidst Pandemic: A Case Study of Ponnani Taluk, Malappuram" is a Bonafide record of the work done by Ms. AnusreeK.S, (SHAVMEC001) under the guidance Ms. Mishma Davis, Assistant Professor, Department of Economics, Sacred Heart College, Chalakudy in partial fulfillment of the Degree of Master of Arts in Economics under the University of Calicut during the Academic year 2021-2023.

Supervising Teacher

Ms. Mishma Davis

DEPT. OF ECONOMICS CHALAKUDY PIN 680 307 SACRED HEART COLLEGE

Place: Chalakudy

Date: 21-07-2023

IMPACT OF NH66 ROAD WIDENING ON LOCAL HOUSEHOLDS: A CASE STUDY OF VELIYANCODE PANCHAYATH, MALAPPURAM

BY

SREELAKSHMI M R

REGISTER NO: SHAVMEC002

YEAR: 2023

PROJECT REPORT

Submitted to

UNIVERSITY OF CALICUT

In partial fulfillment of the requirement for the award of degree of

MASTER OF ARTS IN ECONOMICS

DEPARTMENT OF ECONOMICS

SACREAD HEART COLLEGE

CHALAKUDY

verified on 2/8/23 Sreelakshmi M R

CERTIFICATE

This is to certify that the project report "Impact of NH66 Road Widening on local households: A case study of Veliyancode Panchayath, Malappuram" is a Bonafide record of the work done by Sreelakshmi M.R, (SHAVMEC002) under the guidance Ms. Vishnupriya K G, Assistant Professor, Department of Economics, Sacred Heart College, Chalakudy in partial fulfillment of the Degree of Master of Arts in Economics under the University of Calicut during the Academic year 2021-2023.



Supervising Teacher

Ms. Vishnupriya K G

Place: Chalakudy

Date: 21-07-2023

Department of Physics

STUDY ON THE EFFECT OF CONCENTRATORS ON THE EFFICIENCY OF SOLAR CELLS

PROJECT REPORT
Submitted to the
UNIVERSITY OF CALICUT
In partial fulfilment of the requirements for the award of the degree
BACHELOR OF SCIENCE
IN
PHYSICS

Under the guidance of:
DR.NIJO VARGHESE
Assistant professor of Department of Physics
Sacred Heart College, Chalakudy

By
SONA MARIYA
SHAUSPH027

AGNA ROSE RAJU
JYOTHI M.S
BLESSY BABU
ARATHI K.B

Department of Physics
Sacred Heart College, Chalakudy
Thrissur
Kerala
2022-2023

CERTIFICATE

This is to certify that the project work entitled "**STUDY ON THE EFFECT OF CONCENTRATORS ON THE EFFICIENCY OF SOLAR CELLS**" is bonafide work done by **AGNA ROSE RAJU, ARATHI K.B, BLESSY BABU, JYOTHI M.S, SONA MARIYA** under the guidance of **DR.NIJO VARGHESE**, Department of Physics, Sacred Heart College, Chalakudy during the academic year of 2022-2023 and submitted for partial fulfillment of requirement of award of Degree of Bachelor of Science in Physics.

Project Guide:.

DR.NIJO VARGHESE.
Department of Physics
Sacred Heart College
Chalakudy

Examiners:
1.

2.

STUDY OF COLOR OF STARS IN THE SLOAN DIGITAL SKY SURVEY

PROJECT REPORT

Submitted to the

UNIVERSITY OF CALICUT

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

BACHELOR OF SCIENCE IN PHYSICS

Under the guidance of:

Ms. Fency K. F

Assistant professor

Department of Physics

Sacred Heart College, Chalakudy

By

Abhirami K H

SHAUSPH001

ANJANA SAJEEVAN - SHAUSPH006
ANJANA A·B - SHAUSPH005
Ayana Bose P.C - SHAUSPH010
Abhirami K·H - SHAUSPH001
Arya Sunny. SHAUSPH009

Department of Physics

Sacred Heart College, Chalakudy

Thrissur

Kerala

2022-2023

SACRED HEART COLLEGE PG DEPT OF PHYSICS CHALAKUDY

CERTIFICATE

This is to certify that the project work entitled "STUDY OF COLOR OF STARS IN THE SLOAN DIGITAL SKY SURVEY" is a bonafide work done by Abhirami K H under the guidance of Ms. Fency K.F, Assistant Professor, Department of Physics, Sacred Heart College, Chalakudy during the academic year of 2022-2023 and submitted for partial fulfillment of requirement of award of Degree of Bachelor of Science in Physics.

Project Guide:

Ms. Fency K.F

Department of Physics

Sacred Heart College, Chalakudy

Examiner:

SACRED HEART COLLEGE PG DEPT OF PHYSICS CHALAKUDY

ESTIMATION OF SUGAR CONTENT IN SOFT DRINKS USING HOLLOW PRISM

PROJECT REPORT

Submitted to the

UNIVERSITY OF CALICUT

In partial fulfilment of the requirement for the award of the degree

BACHELOR OF SCIENCE

IN PHYSICS

Under the guidance of

Ms. Libi prakash

Assistant professor(on contract)

Department of physics

Sacred heart college, Chalakudy

By

ANAGH.A.S - SHAUSPH018

NIYA CV - SHAUSPH026

SATHEERTHA TS - SHAUSPH014

LULUVA V S - SHAUSPH025

AYISHA FARHEEN - SHAUSPH021

Department of physics

Sacred Heart College,Chalakudy

Thrissur, Kerala 2021 - 22

CERTIFICATE

This is to certify that the project work entitled "**ESTIMATION OF SUGAR CONTENT IN SOFTDRINKS USING HOLLOW PRISM**"is a bona-fide work done under the guidance of **Ms.Libi prakash** ,department of physics, sacred heart college, Chalakudyduring the academic year of 2022-2023 and submitted for partial fulfilment of requirement of award of degree of Bachelor ofscience in physics.

SACRED HEART COLLEGE CHALAKUDY PG DEPT OF PHYSICS

Project Guide:

Ms.Libi prakash

Department of physics

Sacred heart college ,Chalakudy

Examiner:

MORPHOLOGICAL CLASSIFICATION OF GALAXIES AND GALAXY CLUSTERS

PROJECT REPORT
Submitted to the
UNIVERSITY OF CALICUT

In partial fulfilment of the requirements for the award of the degree

BACHELOR OF SCIENCE
IN
PHYSICS

Under the guidance of:

Ms. Fency K. F
Assistant Professor
Department of Physics
Sacred Heart College, Chalakudy

By

Ambika Reen Babu - SHAUSPH003
Anna Jose - SHAUSPH007
Anu Dasan M. D - SHAUSPH008
Shahna C. T- SHAUSPH015

Department of Physics
Sacred Heart College, Chalakudy
Thrissur

Kerala
2022-2023

CERTIFICATE

This is to certify that the project work entitled **"MORPHOLOGICAL CLASSIFICATION OF GALAXIES AND GALAXY CLUSTERS"** is bonafide work done by ..... under the guidance of Ms. Fency K.F, Department of Physics, Sacred Heart College, Chalakudy during the academic year 2022-2023 and submitted for partial fulfilment of requirement of award of Degree of Bachelor of Science in Physics.

Project Guide

SACRED HEART COLLEGE PG DEPT. OF PHYSICS CHALAKUDY

Ms. Fency K.F
Assistant Professor
Department of Physics
Sacred Heart College, Chalakudy

Examiner:

Effects of Dust on Solar Cell Efficiency

PROJECT REPORT
Submitted to the
UNIVERSITY OF CALICUT
In partial fulfilment of the requirements for the award of the degree
BACHELOR OF SCIENCE
IN
PHYSICS

Under the guidance of:
DR.NIJO VARGHESE
Assistant professor of Department of Physics
Sacred Heart College, Chalakudy

By
Abia Cleetaus
Anisha P V
Gauri T S
Nikitha K R
Sandra Santhosh
SHAUSPHO02
SHAUSPH004
SHAUSPH011
SHAUSPHO12
SHAUSPH013

Department of Physics
Sacred Heart College, Chalakudy
Thrissur
Kerala
2022-2023

CERTIFICATE

This is to certify that the project work entitled **"Effects of Dust on Solar Cells and their Efficiency"** is bonafide work done by Abia Cleetaus

Anisha P V,Gauri T S ,Nikitha K R ,Sandra Santhosh under the guidance of **DR.NIJO VARGHESE**, Department of Physics, Sacred Heart College, Chalakudy during the academic year of 2022-2023 and submitted for partial fulfilment of requirement of award of Degree of Bachelor of Science in Physics.

Project Guide:

DR.NIJO VARGHESE.
Department of Physics.
Sacred Heart College
Chalakudy

Examiners:

1.

2.

STUDIES ON THE UHRIG DYNAMICAL DECOUPLING SCHEME TO COMBAT HIGHER ORDER POLARIZATION QUBIT DECOHERENCE

Project Report submitted to the

UNIVERSITY OF CALICUT

In partial fulfillment of the requirement for the award of the degree

Master of Science

In

Physics

By

RHEBA SURESH

Reg. No.: SHAVMPH009

Under the guidance of

Dr. D SAJEEV

Assistant Professor

Department of Physics,

Govt. College Karyavattom

2021-2023

CERTIFIED AS BONAFIED RESEARCH WORK

EXTERNAL EXAMINERS:

1. Sauthy. N. S.
2. JISWIN VARGHESE

HEAD OF THE DEPARTMENT:

02/08/2023

Department of Physics, Sacred Heart College, Chalakudy

2022-2023

CERTIFICATE

This is to certify that this project report entitled **"STUDIES ON THE UHRIG DYNAMICAL DECOUPLING SCHEME TO COMBAT HIGER ORDER POLARIZATION QUBIT DECOHERENCE"** is an authentic record of the project work carried out by Ms. Rheba Suresh, student of Master of Science in Physics, Department of Physics, Sacred Heart College, Chalakudy, successfully completed under my supervision in the Department of Physics, Govt. College Karyavattom, Thiruvananthapuram. The contents of this project work have not been presented earlier for the award of any other degree in any other universities.

Date: 02/08/2023

Place: Karyavattom

Dr. D SAJEEV
Assistant Professor
Department of Physics
Government College, Kariavattom
Thiruvananthapuram - 695581

Dr. D Sajeev
Assistant Professor
Govt. College Karyavattom,
Thiruvananthapuram

Exploring Extragalactic Component in the Ultraviolet Sky: Insights from GALEX Observations

Project report submitted to the

UNIVERSITY OF CALICUT

In partial fulfillment of the requirement for the award of the degree

In

MASTER OF SCIENCE IN PHYSICS

By
ARSHNA PULLIKKUDI
Reg.No:SHAVMPH 005
Department of Physics,Sacred Heart College

Chalakudy,Thrissur
Under the guidance of
DR.SUJATHA N.V
Assistant Professor
Dept. of Physics
St.Xavier's College for Women ,Aluva
2021-2023 Aluva

DEPARTMENT OF PHYSICS
SACRED HEART COLLEGE, CHALAKUDY, THRISSUR, PIN-680741

CERTIFICATE

This is to certify that this project report entitled **"Exploring Extragalactic Component in the Ultraviolet Sky: Insights from GALEX Observations" Is** an authentic record of the project work carried out by Arshna pullikkudi, student of Master of Science in Physics, Department of Physics, Sacred Heart College, Chalakudy, successfully completed under my supervision. The contents of this project work has not been presented earlier for the award of any other degree in any other universities.

Internal Guide

Ms. Fency K F
Assistant Professor
Dept. of Physics
Sacred Heart College, Chalakudy

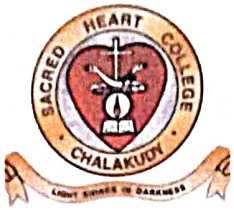
External Guide

DR.Sujatha N V
Assistant Professor
Dept. of Physics
St.Xavier's College for Women, Aluva

Place: Chalakudy

Date: 2/8/2023

SACRED HEART COLLEGE PG DEPT OF PHYSICS CHALAKUDY



DEPARTMENT OF PHYSICS
SACRED HEART COLLEGE, CHALAKUDY, THRISSUR, PIN-680741

CERTIFICATE

This is to verify that the dissertation entitled "**Exploring Extragalactic Component in the Ultraviolet Sky: Insights from GALEX Observations**" is a bonafide record done by ARSHNA PULLIKKUDI (SHAVMPH005) at Department of Physics, St.Xavier'sCollege for Women Aluva in partial fulfillment of the requirement for the MASTER OF SCIENCE in PHYSICS of Department of Physics, Sacred Heart College, Chalakudy, Calicut University during the period 2021-2023.

Dr. NIJO VARGHESE

HEAD OF THE DEPARTMENT

SACRED HEART COLLEGE CHALAKUDY



EFFECT OF CERIUM DOPING ON THE PROPERTIES OF TiO_2 NANOPARTICLES

Dissertation submitted to the

UNIVERSITY OF CALICUT

In partial fulfillment of the requirement for the award of the degree

Master of Science

IN

Physics

Submitted by

JISNA SHAJI

Reg.No.: SHAVMPH006

Department of Physics, Sacred Heart College, Chalakudy, Thrissur

Under the esteemed supervision and guidance of

Dr.SHEENA P A

Associate Professor

Department of Physics,

M.E.S. Asmabi College, P.Vemballur

SACRED HEART COLLEGE PG DEPT OF PHYSICS CHALAKUDY

2021-2023

Department of Physics, Sacred Heart College, Chalakudy

2022-2023

CERTIFICATE

This is to certify that this project report entitled "**EFFECT OF CERIUM DOPING ON THE PROPERTIES OF TiO_2 NANOPARTICLES**" is an authentic record of the project work carried out by Ms.Jisna Shaji, student of Master of Science in Physics, Department of Physics, Sacred Heart College, Chalakudy, successfully completed under my supervision in the Department of Physics, M.E.S. Asmabi College, P. Vemballur, Thrissur. The contents of this project work has not been presented earlier for the award of any other degree in any other universities.

Date: 02/08/2023

Place: Vemballur

Dr. Sheena P A

Associate Professor

Department of Physics

M.E.S. Asmabi College

P.Vemballur, Thrissur

Dr. Sheena P A, MPhil, PhD
Associate Professor
Department of Physics
M E S Asmabi College
P. Vemballur, Kodungallur

DIFFUSE ULTRAVIOLET STUDIES OF CHANDRA DEEP FIELD

Project report submitted to the

UNIVERSITY OF CALICUT

In partial fulfilment of the requirement for the award of the degree

In

MASTER OF SCIENCE IN PHYSICS

By

NIKHILA PAUL

Reg.No:SHAVMPH008

Department of Physics,Sacred Heart College Chalakudy,Thrissur

Under the guidance of

Dr. Sujatha N. V

Assistant professor

Dept. Of physics

St. Xavier's college for women, Aluva

2021-2023

DEPARTMENT OF PHYSICS

SACRED HEART COLLEGE, CHALAKUDY, THRISSUR, PIN-680741

CERTIFICATE

This is to certify that this project report entitled "**DIFFUSE ULTRAVIOLET STUDIES OF CHANDRA DEEP FIELD**" is an authentic record of the project work carried out by Sr.Nikhila Paul, student of Master of Science in Physics, Department of Physics, Sacred Heart College, Chalakudy, successfully completed under my supervision. The contents of this project work has not been presented earlier for the award of any other degree in any other universities.

Internal Guide

Ms. Fency K F
Assistant Professor
Dept. of Physics
Sacred Heart College, Chalakudy

External Guide

DR.Sujatha N V
Assistant Professor
Dept. of Physics
St.Xavier's College for Women, Aluva

Place: Chalakudy

Date: 2/8/2023

GREEN SYNTHESIS OF SILVER NANOPARTICLES USING SCLEICHERA OLEOSA PLANT EXTRACT AND THEIR NONLINEAR OPTICAL STUDIES

MSc Project Report

Submitted to

SACRED HEART COLLEGE CHALAKUDY

Affiliated to the University of Calicut in partial fulfillment of the requirement for the award of the degree of

MASTER OF SCIENCE IN PHYSICS

March 2023

Submitted by

RITTY LONAPPAN

SHAVMPH010

Under the Guidance of

Dr. BENOY ANAND

Assistant professor

Department of physics

St. Joseph's College, Irinjalakuda

Department of physics

Sacred Heart College, Chalakudy

CERTIFICATE

This is to certify that the dissertation entitled **"GREEN SYNTHESIS OF SILVER NANOPARTICLES USING SCLECHERA OLEOSA PLANT EXTRACT AND THEIR NONLINEAR OPTICAL STUDIES"** is a bonafide record of work done by **RITTY LONAPPAN** (SHAVMPH010) at St. Joseph's college, Irinjalakuda under the guidance of **Dr. BENOY ANAND** in partial fulfillment of the requirement for the award of Master of Science in Physics from University of Calicut during the period of March 2022 to July 2023.

Head of department

Dr. Nijo Varghese

Associate professor

Sacred Heart College, Chalakudy

Certified that the candidate, Reg no: SHAVMPH010 was examined in the in the project viva held on ..Sacred...Heart...College....Chalakudy.

External examiners:

1) Sruthy. N.S.

2) JISWIN VARGHESE

Biogenic Synthesis of Iron Oxide Nanoparticles in Varied Conditions and Study of the Structural and Optical properties

Project Report
Submitted to the
University of Calicut
partial fulfilment of the requirements for the award of the degree

MASTER OF SCIENCE
IN
PHYSICS

Under the guidance of
Dr.Veena Gopalan E

Asst. Professor, Department of physics,

Vimala College (Autonomous), Thrissur

By
Sandra Roji
Reg. No: SHAVMPH011

Department of Physics
Sacred Heart College, Chalakkudy
Thrissur
Kerala
2022-2023

PG & Research Department of Physics
Vimala College (Autonomous)
Thrissur

CERTIFICATE

This is to certify that the project work entitled **"Biogenic Synthesis of Iron Oxide Nanoparticles in Varied Conditions and Study of the Structural and Optical properties"** is a bonafide work done by Ms. SANDRA ROJI (Reg No:SHAVMPH011) under the guidance of Dr. Veena Gopalan E, Assistant Professor, Department of Physics, Vimala College (Autonomous), Thrissur during the academic year of 2022-2023 and submitted for partial fulfilment of requirement of the award of Degree of MASTER OF SCIENCE in Physics.

Dr. Veena Gopalan E
(Project Guide)
Asst. Professor, Department of Physics
Vimala College (Autonomous), Thrissur

Examiner 1: Sruthy.N.S

Examiner 2: JISWIN VARGHESE

Investigation on the Structural and Dielectric Properties of Cobalt Substituted Lanthanum Sodium Manganite Synthesized by Sol-Gel Auto-Combustion Method

PROJECT REPORT

submitted to the
UNIVERSITY OF CALICUT
partial fulfilment of the requirements for the award of the degree

Master of Science
in
Physics

Under the guidance of
Dr. Veena Gopalan E

Assistant Professor, Post Graduate and Research Department of physics,
Vimala College (Autonomous), Thrissur

by
AIBEL JOHN

SHAVMPH001

Department of Physics
Sacred Heart College, Chalakudy
Thrissur
Kerala
2022-2023

SACRED HEART COLLEGE PG DEPT OF PHYSICS CHALAKUDY

Scanned with OKEN Scanner

Post Graduate & Research Department of Physics
Vimala College (Autonomous)
Thrissur-09

CERTIFICATE

This is to certify that the project work entitled **"Investigation on the Structural and Dielectric Properties of Cobalt Substituted Lanthanum Sodium Manganite Synthesized by Sol-Gel Auto-Combustion Method"** is bonafide work done by **Ms. Aibel John**(Reg No:SHAVMPH001) under the guidance of **Dr. Veena Gopalan E**, Assistant Professor, Post Graduate and Research Department of Physics, Vimala College (Autonomous), Thrissur during the academic year of 2022-2023 and submitted for partial fulfilment of requirement of the award of Degree of Master of Science in Physics.

Dr. Veena Gopalan E
(Project Guide)
Assistant Professor,
Department of Physics
Vimala College (Autonomous), Thrissur

Examiner 1: JISWIN VARGHESE

Examiner 2: SRUTHY. N. S.

PG DEPT OF PHYSICS

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ONE-POT SYNTHESIS OF LUMINESCENT CARBON QUANTUM DOTS WITH HIGH QUANTUM YIELD

Msc Project Report
Submitted to

SACRED HEART COLLEGE CHALAKUDY

Affiliated to the University of Calicut in partial fulfillment of the requirement for the award of degree of

MASTER OF SCIENCE IN PHYSICS
MARCH 2023

Submitted by
AMEESHA K V
SHAVMPH003

Under the Guidance of
Dr. VINAYASREE S.
Assistant professor,
Department of
Physics, KKTM Govt.
College, Kodugallur

SACRED HEART COLLEGE PG DEPT OF PHYSICS CHALAKUDY

Scanned with OKEN Scanner

Department of Physics

KKTM Govt. College, Kodugallur

CERTIFICATE

is to certify that the dissertation entitled "**ONE - POT SYNTHESIS OF LUMINESCENT CARBON QUANTUM DOTS WITH HIGH QUANTUM YIELD**" has been successfully completed during the academic year 2022-23 in partial fulfillment of the requirements for the award of degree of Masters in Physics at Calicut University. The project work was conducted under my supervision and guidance in the Department of Physics, KKTM Govt. College, Kodugallur. The project work has been found to be original and satisfactory in terms of content, presentation, and relevance to the field of Physics.

Place: Pallut

Date: 4/8/'23

(Signature of the guide)
Dr. Vinayasree S.
Assistant Professor
Department of Physics
KKTM Govt. College,

DEPARTMENT OF PHYSICS
PULLUT - 680 663
K.K.T.M. GOVT. COLLEGE

Scanned with OKEN Scanner

CIRCULAR MICRO STRIP PATCH ANTENNA FOR GPS APPLICATIONS

Project report submitted to the

UNIVERSITY OF CALICUT

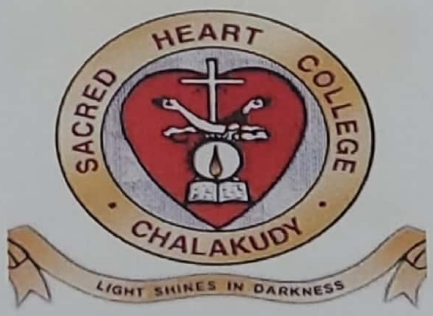
in partial fulfilment of the requirement for the award of the degree

MASTER OF SCIENCE IN PHYSICS

By

ANILA K J

SHAVMPH004





Under the guidance of

Dr. JOE KIZHAKOODEN

HEAD & ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS

ST.THOMAS COLLEGE, AUTONOMOUS, THRISSUR

2021-2023

Scanned with OKEN Scanner

DEPARTMENT OF PHYSICS
ST.THOMAS COLLEGE, AUTONOMOUS, THRISSUR

CERTIFICATE

This is to certify that the project work entitled "CIRCULAR MICROSTRIP PATCH ANTENNA FOR GPS APPLICATIONS" by Ms.ANILA K J, Department of Physics, Sacred Heart College Chalakudy, in partial fulfilment of the requirement for the award of the Degree of Master of Science in Physics, is an authentic record of the work carried out under my supervision and guidance.

Dr. JOE KIZHAKOODEN
HEAD & ASSISTANT PROFESSOR,
DEPARTMENT OF PHYSICS,
ST..THOMAS COLLEGE, AUTONOMOUS,
THRISSUR

DATE: 05/08/2023

PLACE: Thrissur

Scanned with OKEN Scanner

SONOCATALYTIC REMOVAL OF CONGO RED FROM WASTE WATER USING FACILE SYNTHESIZED Cu DOPED ZnS

Project report submitted in partial fulfilment of the requirements for the award of the degree of

Master of Science in Physics

ALENGREEN THOMAS

Reg. No : SHAVMPH002

Under the guidance of

Dr. Libu K. Alexander

Assistant Professor

Department of Physics

University of Calicut



DEPARTMENT OF PHYSICS

SACRED HEART COLLEGE, CHALAKKUDY



CERTIFICATE

Certified that the work incorporated in the project entitled ' SONOCATALYTIC REMOVAL OF CONGO RED FROM WASTEWATER USING Cu- DOPED ZnS' submitted by ALENGREEN THOMAS for the partial fulfilment of M.Sc. course in the Department of Physics, Calicut University Campus during 2021-2023 comprises the results of independent and original work done by the candidate under my guidance.

2/8/2023

Dr. Libu K. Alexander
Assistant Professor
Department of Physics
University of Calicut

External Examiners :-

1) JISWIN VARGHESE

2) Sruthy. N. S

RECTANGULAR PATCH ANTENNA WITH SYMMETRICAL U SLOT ON PARTIAL GROUND FOR UWB APPLICATION

Project report submitted to the

UNIVERSITY OF CALICUT

In partial fulfilment of the requirement for the award of the degree

MASTER OF SCIENCE IN PHYSICS

BY

NEENA MOL U.T

SHAVMPH007

Under the guidance of

DR. JOE KIZHAKOODEN

HEAD &ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS

ST. THOMAS COLLEGE, AUTONOMOUS, THRISSUR

2021-2023

CERTIFIED AS BONAFIDE RESEARSH WORK

HEAD OF THE DEPARTMENT

EXTERNAL EXAMINER

1. Sruthy. N S

2. JISWIN VARGHESE

H O D
Department of physics
Sacred Heart College,
Chalakudy

DEPARTMENT OF PHYSICS
ST. THOMAS COLLEGE, AUTONOMOUS, THRISSUR

CERTIFICATE

This is to certify that the project work entitled "RECTANGULAR PATCH ANTENNA WITH SYMMETRICAL U SLOT ON PARTIAL GROUND FOR UWB APPLICATION" by NEENA MOL U.T, Department of Physics, Sacred Heart College Chalakudy, in partial fulfilment of the requirement for the award of the Degree of Master of Science in Physics, is an authentic record of the work carried out under my supervision and guidance.

DATE: 05/08/2023

DR.JOE KIZHAKOODEN
HEAD & ASSISTANT PROFESSOR,
DEPARTMENT OF PHYSICS,
ST. THOMAS COLLEGE, AUTONOMOUS,
THRISSUR

PLACE: Thrissur

Department of History

LOCAL HISTORY OF THIRUVILWAMALA

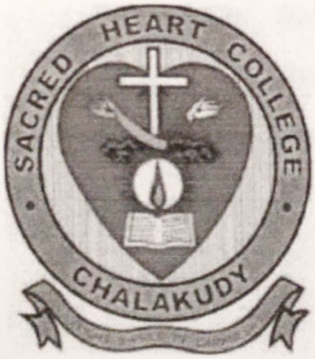
A dissertation submitted to the University of Calicut in partial fulfilment of therequirements for the award of degree

Bachelor of Arts in History

SNEHA BABU

(Reg No: SHAUAHIR37)

Department of History



Sacred Heart College

Chalakudy

2020 – 2023

LOCAL HISTORY OF ATHIRAPPILLY

A dissertation of Subject to the University of Calicut in partial fulfilment of the requirements for the award of degree

Bachelor of Arts in History

ANILA ANILKUMAR

(Reg.No.SHAUAHIR15)

Department of History



Sacred Heart College
Chalakudy

2022-2023

LOCAL HISTORY OF ANGAMALY

A dissertation submitted to the University of Calicut in partial fulfilment of the requirements for the award of degree

Bachelor of Arts in History

VIJISHA V.V

(Reg.No. SHAUAHIR 43)

Department of History

SACRED HEART COLLEGE

CHALAKUDY

LOCAL HISTORY OF IDUKKI

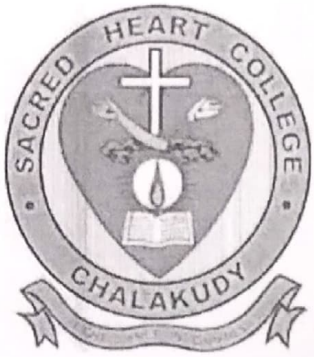
A dissertation submitted to the university of Calicut in partial fulfilment of the requirements for the award of degree

Bachelor of Arts in History

ARCHANA T S

(Reg No: SHAUAHIR16)

Department of History



Sacred Heart College

Chalakudy

2020 – 2023

Nilayude Theerathe Mamanga Naadu

A dissertation submitted to the University of Calicut in partial fulfillment of the requirements for the award of degree.

Bachelor of Arts in History.

Khadeeja Sanha. C

(Reg. No: SHAUAHIR26)

Department of History

Sacred Heart College

Chalakudy

2020 - 2023

LOCAL HISTORY OF VAIKOM

Dissertation submitted to the UNIVERSITY OF CALICUT In partial fulfilment of the requirements for the award of Degree of Bachelor of Arts in History.

SREELAKSHMI K

(Reg. No. SHAUAHIR39)

DEPARTMENT OF HISTORY

SACRED HEART OF COLLEGE

CHALAKUDY

2022-2023

LOCAL HISTORY OF SIVAGIRI

A dissertation submitted to the University of Calicut in Partial fulfilment of

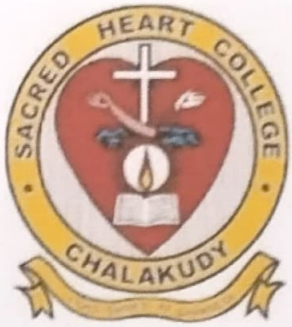
The requirements for the award of degree

Bachelor of Arts in History

ASWATHY M R

(Reg No: SHAUAHIR18)

Department of History



Sacred Heart College

Chalakudy

2020-2023

JEWISH SETTLEMENTS IN COCHIN AND KODUGALLUR

Dissertations submitted to the UNIERSITY OF CALICUT in partial fulfillment of the requirements for the award of Degree of Bachelor of Arts in History.

MARILA PAUL

(Reg No. SHAUAHIR04)

DEPARTMENT OF HISTORY

SACRED HEART COLLEGE

CHALAKUDY

2020-2023

LOCAL HISTORY OF PALAKKAD

A dissertation submitted to the University of Calicut in partial fulfilment of the requirements for the award of degree

Bachelor of Arts in History

ADHILA BANU

(Reg.No. SHAUAHIR 13)

Department of History

SACRED HEART COLLEGE

CHALAKUDY

LOCAL HISTORY OF KODAKARA

A dissertation submitted to the University of Calicut in partial fulfilment of the requirements for the award of degree

Bachelor of Arts in History

THAHIRA K R

(Reg No.SHAUAHIR40)

Department of History

SACRED HEART COLLEGE

CHALAKUDY

THE RELIGION OF JAINISM

Dissertation submitted to the UNIVERSITY OF CALICUT in partial fulfillment of the requirements for the award of Degree of Bachelor of Arts in History.

PRATTIPATTI BABY RANI

(Reg. No. SHAUAHIR06)

DEPARTMENT OF HISTORY

SACRED HEART COLLEGE

CHALAKUDY

2020-2023

A HISTORICAL STUDY OF THE KUTTIPPURAM

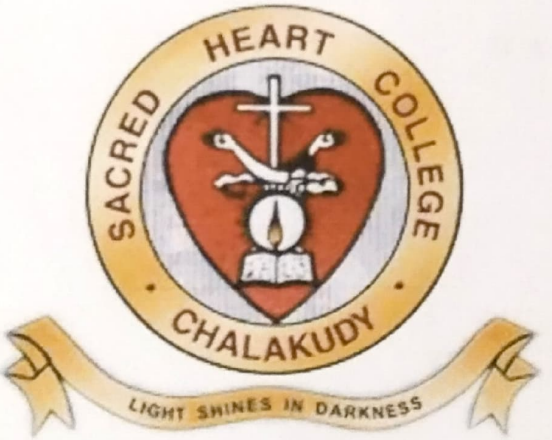
A dissertation submitted to the University of Calicut in partial fulfillment of the requirements .

Bachelor of Arts in History.

THANKESWARI.V.P

((Reg. No: SHAUAHIR41)

Department of History



Sacred Heart College

Chalakudy

2020 - 2023

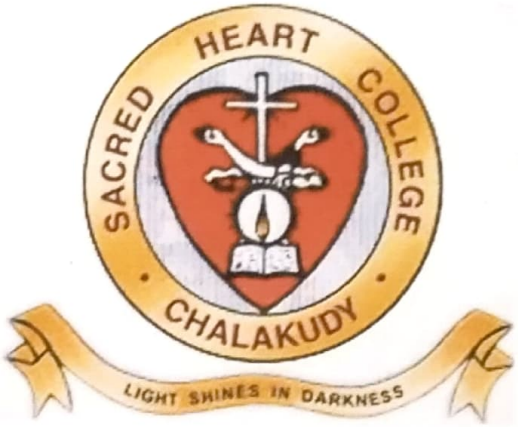
A HSTORICAL STUDY OF THE PONNANI

A dissertation submitted to the University of Calicut in partial fulfillment of the requirements for the award of degree.

Bachelor of Arts in History.

Shifna Shireen. K.P
(Reg.No.SHAUAHIR11)

Department of History



Sacred Heart College

Chalakudy

2020 - 2023

LOCAL HISTORY OF OTTAPALAM

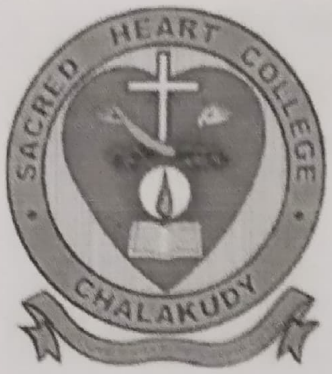
A dissertation submitted to the University of Calicut in partial fulfillment of therequirements for the award of degree

Bachelor of Arts in History

Sneha K Ramesh

(Reg No: SHAUAHIR38)

Department of History



Sacred Heart College

Chalakudy

2020 – 2023

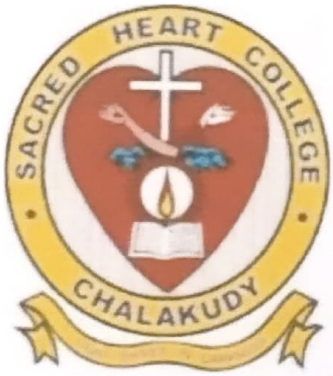
LOCAL HISTORY OF FORT KOCHI

A dissertation submitted to the University of Calicut in Partial fulfilment of
The requirements for the award of degree

Bachelor of Arts In history

NANDANA T N
(Reg No: SHAUAHIR 29)

Department of History



Sacred Heart College
Chalakudy
2020-2023

A HISTORICAL STUDY OF KUTTICHIRA

A dissertation to the University of Calicut in p partial fulfillment of the requirement for the Award of Degree Bachelor of Arts in history.

VANDHANA E V

SHAUAHIR12

DEPARTMENT OF HISTORY

SACRED HEART COLLEGE

CHALAKUDY

2020-2023

HISTORY OF NEDUMKOTTA

A dissertation submitted to the university of Calicut in partial fulfillment of the requirements for the award of degree

Bachelor of Arts in History

GAYATHRY N J

(Register No: SHAUAHIR22)

Department of History

Sacred Heart College

Chalakudy

2020-2023

LOCAL HISTORY OF KODASSERY

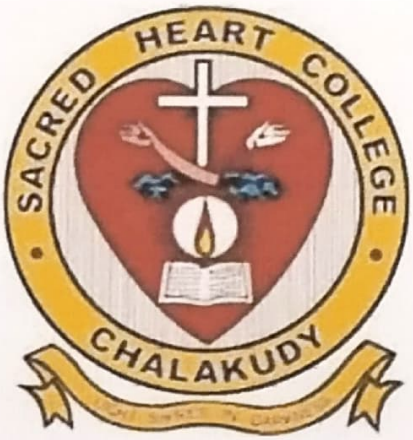
A dissertation submitted to the University of Calicut in Partial fulfilment of the requirements for the award of degree

Bachelor of Arts in History

RESHMA K S

(Reg No: SHAVAHIR35)

Department of History



Sacred Heart College

Chalakudy

2020-2023

LOCAL HISTORY OF MATTANCHERRY

A dissertation submitted to the University of Calicut in partial fulfillment of
The requirements for the award of degree

Bachelor of Arts in History

PRAVEENA M B
(Reg No: SHAUAHIR31)

Department of History

Sacred Heart College, Chalakudy
2020-2023

LOCAL HISTORY OF CHENDAMANGALAM

A dissertation submitted to the University of Calicut in Partial fulfilment of

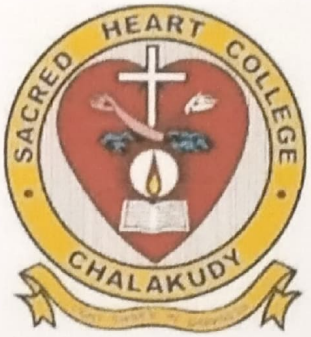
The requirements for the award of degree

Bachelor of Arts in History

RAJALAKSHMI V A

(Reg No: SHAUAHIR32)

Department of History



Sacred Heart College

Chalakudy

2020-2023

A HISTORICAL STUDY OF SAMPALOOR

A dissertation submitted to the university of Calicut in partial fulfillment of the requirements for the award to the degree of bachelor of arts in history

MEGHA BENNY

SHAUAHIR28

DEPARTMENT OF HISTORY

SACRED HEART COLLEGE CHALAKUDY

2020_2023

LOCAL HISTORY OF PUTHENCHIRA

Dissertation submitted to the **UNIVERSITY OF CALICUT** in partial fulfilment of the requirements for the award of Degree of Bachelor of Arts in History.

K.A. SANILA

(Reg. No. SHAUAHIR25)

DEPARTMENT OF HISTORY

SACRED HEART COLLEGE CHALAKUDY

2020-2023

LOCAL HISTORY OF IRINJALAKUDA

Dissertation submitted to the UNIVERSITY OF CALICUT in partial fulfillment of the requirements for the award of Degree of Bachelor of Arts in History.

SMITHA ANTONY

(Reg. No. SHAUAHIR36)

DEPARTMENT OF HISTORY

SACRED HEART COLLEGE

CHALAKUDY

2020-2023

LOCAL HISTORY OF PARIYARAM

A dissertation submitted to the University of Calicut in partial fulfillment of therequirements for the award of degree

Bachelor of Arts in History

CHINJU P C

(Reg No: SHAUAHIR19)

Department of History



Sacred Heart College

Chalakudy

2020 – 2023

A HISTORICAL STUDY OF GURUVAYOOR

Dissertation submitted to the UNIVERSITY OF CALICUT in partial Fulfilment of the requirements for the award of Degree of Bachelor of Arts in History.

PRAVEENA K

(Reg. No. SHAUAHIR30)

DEPARTMENT OF HISTORY

SACRED HEART COLLEAGE CHALAKUDY

2020-2023

Coimbatore : The Manchester of South India

A dissertation submitted to the University of Calicut in partial fulfilment of the requirements for the award of the degree

Bachelor of Arts in History.

M A FATHIMA JASRA

(Reg.No. SHAUAHIR03)

Department of History



Sacred Heart College, Chalakudy

2020-2023

LOCAL HISTORY OF KANDASSANKADAVU

Dissertation submitted to the UNIVERSITY OF CALICUT in partial fulfilment of the requirements for the award of Degree of Bachelor of Arts in History.

ASHIDA BAIJU

(Reg. No. SHAUAHIR17)

DEPARTMENT OF HISTORY

SACRED HEART COLLEGE

CHALAKUDY

2022-2023

TRACING THE GEOGRAPHICAL AND CULTURAL SIGNIFICANCE OF KUTTANAD

Dissertation submitted to the **UNIVERSITY OF CALICUT** in partial Fulfillment of the requirement for the award of Degree of Bachelor of Arts in History.

REVATHY P R

(Reg. No. SHAUAHIR07)

DEPARTMENT OF HISTORY

SACRED HEART COLLEGE

CHALAKUDY

2020-2023

LOCAL HISTORY OF Chimmini Dam

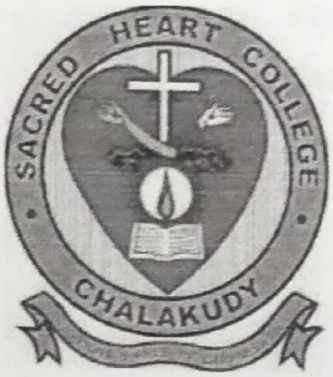
A dissertation submitted to the University of Calicut in partial fulfillment of therequirements for the award of degree

Bachelor of Arts in History

Amrutha K U

(Reg No: SHAUAHIR01)

Department of History



Sacred Heart College

Chalakudy

2020 – 2023

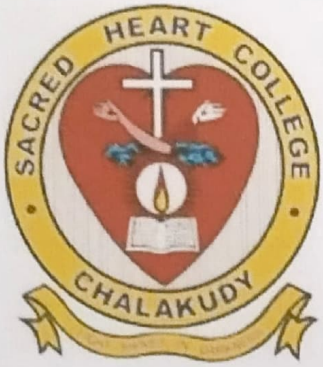
LOCAL HISTORY OF KALADY

A dissertation submitted to the University of Calicut in Partial fulfilment of
The requirements for the award of degree

Bachelor of Arts In history

JOMOL M J
(Reg No: SHAUAHIR 02)

Department of History



Sacred Heart College
Chalakudy
2020-2023

THE HISTORICAL STUDY OF BEYPORE

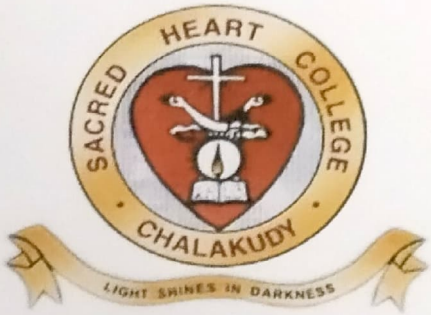
A dissertation submitted to the university of calicut in partial fulfillment of the requirement for the award of degree.

Bachelor of Arts in History

NAJA C P

(RegNo:SHAUAHIR05)

Department of History



Sacred Heart College

Chalakudy

2020-2023

LOCAL HISTORY OF KORATTY

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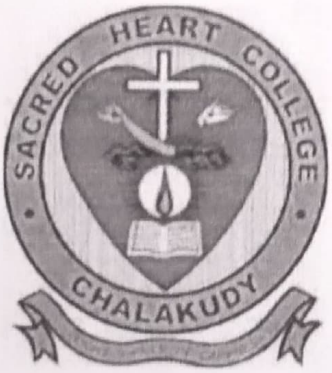
Bachelor of Arts in History

Rathika Ramesan

(Reg No: SHAUAHIR34)

Department of History



Sacred Heart College

Chalakudy

2020 – 2023

LOCAL HISTORY OF KODUNGALLUR

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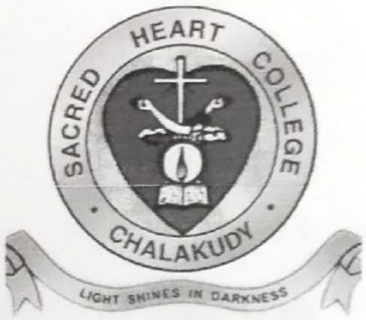
Bachelor of Arts in History

SABAHA BASHEER

(Reg.No: SHAUAHIR08)

Department of History



Sacred Heart College

Chalakudy

2020-2023

A HISTORICAL STUDY OF KOTTAPPURAM

A dissertation submitted to the university of Calicut in partial fulfillment of the requirements for the award to the degree of bachelor of arts in history

HANNA MARY

SHAUAHIR23

DEPARTMENT OF HISTORY

SACRED HEART COLLEGE CHALAKUDY

2020-2023

LOCAL HISTORY OF CHALAKUDY

Dissertation submitted to the **UNIVERSITY OF CALICUT** in partial fulfilment of the requirements for the award of Degree of Bachelor of Arts in History.

AISWARYA BABU

(Reg. No. SHAUAHIR14)

DEPARTMENT OF HISTORY

SACRED HEART COLLEGE CHALAKUDY

2020-2023

LOCAL HISTORY OF CHENDAMANGALAM

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The requirements for the award of degree

Bachelor of Arts In history

VARSHA N S

(Reg No: SHAUAHIR 42)

Department of History

Sacred Heart College

Chalakudy

2020-2023

LOOKING BACK TO THE GLORY OF PERUVANAM ; A LOCAL STUDY

A dissertation submitted to the University of Calicut in partial fulfilment of the requirements for the Award of Degree

Bachelor of Arts in History

SEETHAL M S

(Reg.No:SHAUAHIR09)

Department of History

Sacred Heart College

Chalakudy

2020 - 2023

A HISTORICAL STUDY OF THE TIRUR

A dissertation submitted to the University of Calicut in partial fulfillment of the requirements for the award of degree.

Bachelor of Arts in History.

Shafna Jasmin.p

(Reg. No: SHAUAHIR10)

Department of History

Sacred Heart College

Chalakudy

2020 - 2023

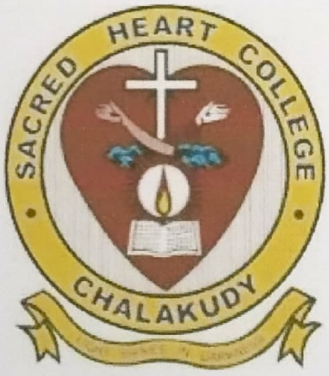
LOCAL HISTORY OF THRISSUR

A dissertation submitted to the University of Calicut in Partial fulfilment of
The requirements for the award of degree

Bachelor of Arts In history

DEVIKRISHNA K S
(Reg No: SHAUAHIR 20)

Department of History



Sacred Heart College
Chalakudy
2020-2023

Department of Mathematics

File Ref.No.70516/GA - IV - J3/2019/Admn

UNIVERSITY OF CALICUT

Abstract

General & Academic - CBCSS PG Regulations 2019 - Scheme and Syllabus of M.Sc Mathematics Programme w.e.f 2020 Admission onwards -Incorporating Outcome Based Education - Implemented - Subject to ratification of Academic Council - Orders Issued.

G & A - IV - J

U.O.No. 5335/2021/Admn Dated, Calicut University.P.O, 17.05.2021

Read:-1) U.O.No. 8953/2019/Admn Dated 06.07.2019.
2) U.O.No. 1336/2020/Admn Dated 31.01.2020.
3) Item no.2 in the minutes of the meeting of Board of Studies in Mathematics PG, Dated 09.04.2021.
4) Remarks of the Dean, Faculty of Science, Dated 08.05.2021.
5) Orders of the Vice Chancellor in the file of even no, Dated 10.05.2021.

ORDER

1. The scheme and syllabus of M.Sc Mathematics Programme under CBCSS PG Regulations 2019 in the affiliated Colleges of the University, w.e.f 2019 admission onwards has been implemented, vide paper read (1) above and same has been modified, vide paper read (2) above.

2. The Board of Studies in Mathematics PG has resolved to incorpate Outcome Based Education (OBE) in the scheme and syllabus of M.Sc Mathematics Programme under affiliated colleges of the University, in tune with the new CBCSS PG Regulations 2019 with effect from 2020 Admission onwards, Vide paper read (3) above.

3. The Dean, Faculty of Science, vide paper read (4) above, has approved to implement the scheme and syllabus of M.Sc Mathematics Programme (CBCSS-PG-2019) incorporating Outcome Based Education (OBE) , in the syllabus forwarded by the Chairperson, Board of Studies in Mathematics PG, in tune with the new CBCSS PG Regulations 2019 with effect from 2020 Admission onwards.

4. Considering the urgency, the Vice Chancellor has accorded sanction to implement the scheme and syllabus of M.Sc Mathematics Programme incorporating Outcome Based Education (OBE) ,in the syllabus forwarded by the Chairperson,Board of Studies in Mathematics in tune with the new CBCSS PG Regulations under affiliated colleges of the University with effect from 2020 Admission onwards, subject to ratification by the Academic Council.

5. Scheme and syllabus of M.Sc Mathematics Programme (CBCSS) incorporating Outcome Based Education (OBE) is therefore implemented with effect from 2020 Admission onwards under affiliated colleges of the University, subject to ratification by the Academic Council.

6. Orders are issued accordingly.

7. U.O.No.1336/2020/Admn Dated 31.01.2020, is modified to this extend.(syllabus appended)

Arsad M

Assistant Registrar

To

The Principals of all Affiliated Colleges
Copy to: PS to VC/PA to PVC/ PA to Registrar/PA to CE/DR, SDE/JCE I/JCE V/DoA/EX and EG
Sections/GA I F/CHMK Library/Information Centres/SF/DF/FC

Forwarded / By Order

Section Officer

UNIVERSITY OF CALICUT



SYLLABUS FOR MSc MATHEMATICS (CBCSS) PG PROGRAMME

EFECTIVE FROM 2020 ADMISSION ONWARDS
Total Credits :80

PROGRAMME OUTCOME:

Upon completing the M. Sc degree in the field of Mathematics, students have/capable of:

- **A solid understanding of graduate level algebra, analysis and topology.**
- **Using their mathematical knowledge to analyze certain problems in day to day life.**
- **Identifying unsolved yet relevant problems in a specific field.**
- **Undertaking original research on a particular topic.**
- **Communicate mathematics accurately and effectively in both written and oral form.**
- **Conducting scholarly or professional activities in an ethical manner.**

SEMESTER 1

Course Code	Title of the Course	No. of Credits	Work Load Hrs./week	Core/Audit Course
MTH1C01	Algebra- I	4	5	Core
MTH1C02	Linear Algebra	4	5	Core
MTH1C03	Real Analysis I	4	5	Core
MTH1C04	Discrete Mathematics	4	5	Core
MTH1C05	Number Theory	4	5	Core
MTH1A01	Ability Enhancement Course[a]	4	0	Audit Course

SEMESTER 2

Course Code	Title of the Course	No. of Credits	Work Load Hrs./week	Core/ Elective
MTH2C06	Algebra- II	4	5	Core
MTH2C07	Real Analysis II	4	5	Core
MTH2C08	Topology	4	5	Core
MTH2C09	ODE & Calculus of Variations	4	5	Core
MTH2C10	Operations Research	4	5	Core
	Professional Competency Course[a]	4	0	Audit Course

SEMESTER 3

Course Code	Title of the Course	No. of Credits	Work Load Hrs./week	Core/Elective
MTH 3C11	Multivariable Calculus & Geometry	4	5	Core
MTH3C12	Complex Analysis	4	5	Core
MTH3C13	Functional Analysis	4	5	Core
MTH3C14	PDE & Integral Equations	4	5	Core
	Elective I*	3	5	Elec.

SEMESTER 4

Course Code	Title of the Course	No. of Credits	Work Load Hrs./week	Core/Elective

MTH4C15	Advanced Functional Analysis	4	5	Core
	Elective II**	3	5	Elec.
	Elective III**	3	5	Elec.
	Elective IV**	3	5	Elec.
MTH4P01	Project	4	5	Core
MTH4 V01	Viva Voce	4		Core

[a] Evaluation of these courses will be as per the latest PG regulations.
* This Elective is to be selected from list of elective courses in third semester
** This Elective is to be selected from list of elective courses in fourth semester

List of Elective Courses in Third Semester

1. MTH3E01 Coding theory
2. MTH3E02 Cryptography
3. MTH3E03 Measure and Integration
4. MTH3E04 Probability Theory

List of Elective Courses in Fourth Semester

1. MTH4E05 Advanced Complex Analysis
2. MTH4E06 Algebraic Number Theory
3. MTH4E07 Algebraic Topology
4. MTH4E08 Commutative Algebra
5. MTH4E09 Differential Geometry
6. MTH4E10 Fluid Dynamics
7. MTH4E11 Graph Theory
8. MTH4E12 Representation Theory
9. MTH4E13 Wavelet Theory

ABILITY ENHANCEMENT COURSE(AEC)

Successful fulfilment of any one of the following shall be considered as the completion of AEC. (i) Internship, (ii) Class room seminar presentation, (iii) Publications, (iv) Case study analysis, (v) Paper presentation, (vi) Book reviews. A student can select any one of these as AEC.

Internship: Internship of duration 5 days under the guidance of a faculty in an institution/department other than the parent department. A certificate of the same should be obtained and submitted to the parent department.

DEPARTMENT OF MATHEMATICS
SACRED HEART COLLEGE, CHALAKUDY
THRISSUR - 680307

CERTIFICATE

This is to certify that the dissertation entitled **"MATROID THEORY"** submitted by **Ms. AKSHARA K.C** (Reg. No. SHAVMMS001) in partial fulfillment of the requirements for the M.Sc. degree in Mathematics to University of Calicut, is a bonafide record of the studies carried out by her under my supervision in the Department of Mathematics, Sacred Heart College, Chalakudy. This report has not been submitted anywhere for any other degree of any other University or Board.

Rahul Rajan
Asst. Prof
St. Aloysius College
Ettumanoor

HOD, DEPARTMENT OF MATHEMATICS
S. H. COLLEGE, CHALAKUDY

8/8/23

External Examiner

DR. SR. SMITHA ROSE C. G.
Assistant Professor,
Department of Mathematics,
St. Mary's College, Thrissur-20.

Ms. Amala George
(Supervising Guide)
Assistant Professor
Sacred Heart College
Chalakudy

Ms. Smitha Davis
(Head of the Department)
Assistant Professor
Sacred Heart College
Chalakudy

Chalakudy
06/07/2023

DEPARTMENT OF MATHEMATICS
SACRED HEART COLLEGE, CHALAKUDY
THRISSUR - 680307

CERTIFICATE

This is to certify that the dissertation entitled **"LOTKA - VOLTERRA MODEL"** submitted by **Ms.ALEENA WILSON** (Reg. No. SHAVMMS002) in partial fulfillment of the requirements for the M.Sc. degree in Mathematics to University of Calicut, is a bonafide record of the studies carried out by her under my supervision in the Department of Mathematics, Sacred Heart College, Chalakudy. This report has not been submitted anywhere for any other degree of any other University or Board.

Rahul Rajan
Asst. Prof
St. Aloysius College
Elthuruth.

External Examiner

8/8/23.
DR. SR. SMITHA ROSE C. G.
Assistant Professor,
Department of Mathematics,
St. Mary's College, Thrissur-20.

Chalakudy

06/07/2023

Dr.Nidhin T J
(Supervising Guide)
Assistant Professor
Sacred Heart College
Chalakudy

HOD. DEPARTMENT OF MATHEMATICS
S. H. COLLEGE, CHALAKUDY

Ms. Smitha Davis
(Head of the Department)
Assistant Professor
Sacred Heart College
Chalakudy

DEPARTMENT OF MATHEMATICS

SACRED HEART COLLEGE, CHALAKUDY

THRISSUR - 680307

CERTIFICATE

This is to certify that the dissertation entitled **"SARD'S THEOREM AND APPLICATION"** submitted by **Ms. ANAGHAKRISHNA K U** (Reg. No. SHAVMMS003) in partial fulfillment of the requirements for the M.Sc. degree in Mathematics to University of Calicut, is a bonafide record of the studies carried out by her under my supervision in the Department of Mathematics, Sacred Heart College, Chalakudy. This report has not been submitted anywhere for any other degree of any other University or Board.

Rahul Rajan
Asst. Prof
St. Aloysius College
Elthuruth.

HOD, DEPARTMENT OF MATHEMATICS
S. H. COLLEGE, CHALAKUDY

External Examiner	Dr. Vijitha mukundan	Ms. Smitha Davis
	(Supervising Guide)	(Head of the Department)
Chalakudy	Assistant Professor	Assistant Professor
6/7/2023	Sacred Heart College	Sacred Heart College
	Chalakudy	Chalakudy

8/8/23

DR. SR. SMITHA ROSE C. G.
Assistant Professor,
Department of Mathematics,
St. Mary's College Thrissur-20.

DEPARTMENT OF MATHEMATICS

SACRED HEART COLLEGE, CHALAKUDY

THRISSUR - 680307

CERTIFICATE

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HOD, DEPARTMENT OF MATHEMATICS
S. H. COLLEGE, CHALAKUDY

External Examiner

DR. SR. SMITHA ROSE C. G.
Assistant Professor,
Department of Mathematics,
St. Mary's College, Thrissur-20.

Chalakudy

06/07/2023

Rahul Rajan
Asst. Prof
St. Aloysius College
Elthuruth.

Ms. Smitha Davis
(Supervising Guide)
Assistant Professor
Sacred Heart College
Chalakudy

Ms. Smitha Davis
(Head of the Department)
Assistant Professor
Sacred Heart College
Chalakudy

DEPARTMENT OF MATHEMATICS
SACRED HEART COLLEGE, CHALAKUDY
THRISSUR - 680307

CERTIFICATE

This is to certify that the dissertation entitled **"COMBINATORIAL DESIGNS"** submitted by **Ms. Ann Maria Varghese** (Reg. No. SHAVMMS005) in partial fulfillment of the requirements for the M.Sc. degree in Mathematics to University of Calicut, is a bonafide record of the studies carried out by her under my supervision in the Department of Mathematics, Sacred Heart College, Chalakudy. This report has not been submitted anywhere for any other degree of any other University or Board.

HOD, DEPARTMENT OF MATHEMATICS
S. H. COLLEGE, CHALAKUDY

External Examiner

28/8/23

DR. SR. SMITHA ROSE C. G.
Assistant Professor,
Department of Mathematics,
St. Mary's College, Thrissur-20.

Chalakudy

06/07/2023

Ms. Amala Mary George
(Supervising Guide)
Assistant Professor
Sacred Heart College
Chalakudy

Ms. Smitha Davis
(Head of the Department)
Assistant Professor
Sacred Heart College
Chalakudy

Rahul Rajan
Asst. Prof
St. Aloysius College
Elthuruth

DEPARTMENT OF MATHEMATICS

SACRED HEART COLLEGE, CHALAKUDY

THRISSUR - 680307

CERTIFICATE

This is to certify that the dissertation entitled **"NETWORK ANALYSIS"** submitted by **Ms. ARYALAKSHMI N A** (Reg. No. SHAVMMS006) in partial fulfillment of the requirements for the M.Sc. degree in Mathematics to University of Calicut, is a bonafide record of the studies carried out by her under my supervision in the Department of Mathematics, Sacred Heart College, Chalakudy. This report has not been submitted anywhere for any other degree of any other University or Board.

Rahul Rajan
Asst - Prof
St. Aloysius College
Elthuruth.

HOD, DEPARTMENT OF MATHEMATICS
S. H. COLLEGE, CHALAKUDY

External Examiner

Dr. Nidhin T J
(Supervising Guide)
Assistant Professor
Sacred Heart College
Chalakudy

Ms. Smitha Davis
(Head of the Department)
Assistant Professor
Sacred Heart College
Chalakudy

18/8/23

DR. SR. SMITHA ROSE C. G.
Assistant Professor,
Department of Mathematics,
St. Mary's College, Thrissur-20.

Chalakudy

06/07/2023

DEPARTMENT OF MATHEMATICS

SACRED HEART COLLEGE, CHALAKUDY

THRISSUR - 680307



CERTIFICATE

This is to certify that the dissertation entitled **"INTRODUCTION TO HYPER-GRAPH "** submitted by **Ms.ASHNA VARGHEESE** (Reg. No. SHAVMMS007) in partial fulfillment of the requirements for the M.Sc. degree in Mathematics to University of Calicut, is a bonafide record of the studies carried out by her under my supervision in the Department of Mathematics, Sacred Heart College, Chalakudy. This report has not been submitted anywhere for any other degree of any other University or Board.

Rahul Rajan
Asst. Prof
St. Aloysius College
Elthuruth.

External Examiner

DR. SR. SMITHA ROSE C. G.
Assistant Professor,
Department of Mathematics,
St. College, Thrissur

Chalakudy

06/07/2023

Dr. Vijitha Mukundan

(Supervising Guide)

Assistant Professor

Sacred Heart College

Chalakudy

HOD, DEPARTMENT OF MATHEMATICS
S. H. COLLEGE, CHALAKUDY

Ms. Smitha Davis

(Head of the Department)

Assistant Professor

Sacred Heart College

Chalakudy

DEPARTMENT OF MATHEMATICS
SACRED HEART COLLEGE, CHALAKUDY
THRISSUR - 680307

CERTIFICATE

This is to certify that the dissertation entitled **"REPRESENTATION THEORY OF GROUPS"** submitted by **Ms. ATHULYA JOY** (Reg. No. SHAVMMS008) in partial fulfillment of the requirements for the M.Sc. degree in Mathematics to University of Calicut, is a bonafide record of the studies carried out by her under my supervision in the Department of Mathematics, Sacred Heart College, Chalakudy. This report has not been submitted anywhere for any other degree of any other University or Board.

HOD, DEPARTMENT OF MATHEMATICS
S. H. COLLEGE, CHALAKUDY

8/8/23
External Examiner

DR. SR. SMITHA ROSE C. G.
Assistant Professor,
Department of Mathematics,
St. Mary's College, Thrissur-20.

Chalakudy
06/07/2023

Miss Smitha Davis
(Supervising Guide)
Assistant Professor
Sacred Heart College
Chalakudy

Rahul Rajan
Asst. Prof
St. Aloysius College
Ettumanoor

Ms. Smitha Davis
(Head of the Department)
Assistant Professor
Sacred Heart College
Chalakudy

DEPARTMENT OF MATHEMATICS
SACRED HEART COLLEGE, CHALAKUDY
THRISSUR - 680307

CERTIFICATE

This is to certify that the dissertation entitled **"BIFURCATION THEORY"** submitted by **Ms. C G ANJANA** (Reg. No. SHAVMMS009) in partial fulfillment of the requirements for the M.Sc. degree in Mathematics to University of Calicut, is a bonafide record of the studies carried out by her under my supervision in the Department of Mathematics, Sacred Heart College, Chalakudy. This report has not been submitted anywhere for any other degree of any other University or Board.

HOD, DEPARTMENT OF MATHEMATICS
S. H. COLLEGE, CHALAKUDY

External Examiner

DR. SR. SMITHA ROSE C. G.
Assistant Professor,
Department of Mathematics,
St. Mary's College, Thrissur-20.

Chalakudy

06/07/2023

Ms.Amala George
(Supervising Guide)
Assistant Professor
Sacred Heart College
Chalakudy

Ms. Smitha Davis
(Head of the Department)
Assistant Professor
Sacred Heart College
Chalakudy

Rahul Rajan
Asst. Prof
St. Aloysius College
Elthuruth.

CERTIFICATE

This is to certify that the project entitled **"A STUDY ON ENERGY OF GRAPH"** submitted to Department of Mathematics in partial fulfilment of the requirement for the award of the M.Sc Degree programme in Mathematics, is a bonafide record of original research work done by **Ms. CHRISTY SHAJI (SHAVMMS010)** during the period of her study in the Department of Mathematics, Sacred Heart College, Chalakudy, under my supervision and guidance during the year 2021-2023

HOD, DEPARTMENT OF MATHEMATICS
S. H. COLLEGE, CHALAKUDY

External Examiner	Ms. Smitha Davis	Ms. Smitha Davis
8/8/23	(Supervising Guide)	(Head of the Department)
DR. SR. SMITHA ROSE C. G.	Assistant Professor	Assistant Professor
Assistant Professor, Department of Mathematics, St. Mary's College, Thrissur-20.	Sacred Heart College	Sacred Heart College
Chalakudy	Chalakudy	Chalakudy

06/07/2023

Rahul Rajan
Asst. Prof
St. Aloysius College
(E) Thrissur.

Place : Chalakudy

Date : 6 July 2023

DEPARTMENT OF MATHEMATICS

SACRED HEART COLLEGE, CHALAKUDY

THRISSUR - 680307

CERTIFICATE

This is to certify that the dissertation entitled **"FUZZY GRAPHS"** submitted by **Ms. DEVIKA M S** (Reg. No. SHAVMMS011) in partial fulfillment of the requirements for the M.Sc. degree in Mathematics to University of Calicut, is a bonafide record of the studies carried out by her under my supervision in the Department of Mathematics, Sacred Heart College, Chalakudy. This report has not been submitted anywhere for any other degree of any other University or Board.

Rahul Rajan
St. Aloysius College
Ettumanoor

HOD, DEPARTMENT OF MATHEMATICS
S. H. COLLEGE, CHALAKUDY

External Examiner

8/8/23
DR. SR. SMITHA ROSE C. G.
Assistant Professor,
Department of Mathematics,
St. Mary's College, Thrissur-20.

Amala George
(Supervising Guide)
Assistant Professor
Sacred Heart College
Chalakudy

Ms. Smitha Davis
(Head of the Department)
Assistant Professor
Sacred Heart College
Chalakudy

Chalakudy

06/07/2023

DEPARTMENT OF MATHEMATICS
SACRED HEART COLLEGE, CHALAKUDY
THRISSUR - 680307

CERTIFICATE

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Rahul Rajan
St. Aloysius College
Elthuruthu.

HOD, DEPARTMENT OF MATHEMATICS
S. H. COLLEGE, CHALAKUDY

External Examiner

DR. SR. SMITHA ROSE C. G.
Assistant Professor,
Department of Mathematics,
St. Mary's College, Thrissur-20.

Chalakudy

06/07/2023

Dr. NIDHIN T J
(Supervising Guide)
Assistant Professor
Sacred Heart College
Chalakudy

Ms. Smitha Davis
(Head of the Department)
Assistant Professor
Sacred Heart College
Chalakudy

DEPARTMENT OF MATHEMATICS
SACRED HEART COLLEGE, CHALAKUDY
THRISSUR - 680307

CERTIFICATE

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HOD, DEPARTMENT OF MATHEMATICS
S. H. COLLEGE, CHALAKUDY

External Examiner

DR. SR. SMITHA ROSE C. G.
Assistant Professor,
Department of Mathematics,
St. Mary's College, Thrissur-20.

Chalakudy

06/07/2023

Rahul Rajan
Asst. Prof
St. Aloysius College
Ettumanoor.

Dr. Nidhin T J
(Supervising Guide)
Assistant Professor
Sacred Heart College
Chalakudy

Ms. Smitha Davis
(Head of the Department)
Assistant Professor
Sacred Heart College
Chalakudy

DEPARTMENT OF MATHEMATICS
SACRED HEART COLLEGE, CHALAKUDY
THRISSUR - 680307



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Rahul Rajan
Asst. Prof
St. Aloysius College
Elthuruth.

HOD, DEPARTMENT OF MATHEMATICS
S. H. COLLEGE, CHALAKUDY

External Examiner

DR. SR. SMITHA ROSE C. G.
Assistant Professor,
Department of Mathematics,
St. Mary's College, Thrissur-20.

Dr.Vijitha Mukundan
(Supervising Guide)
Assistant Professor
Sacred Heart College
Chalakudy

Ms. Smitha Davis
(Head of the Department)
Assistant Professor
Sacred Heart College
Chalakudy

Chalakudy
06/07/2023

DEPARTMENT OF MATHEMATICS
SACRED HEART COLLEGE, CHALAKUDY
THRISSUR - 680307

CERTIFICATE

This is to certify that the dissertation entitled **"GRACEFUL GRAPH"** submitted by **Ms. NIGITHA THOMAS** (Reg. No. SHAVMMS015) in partial fulfillment of the requirements for the M.Sc. degree in Mathematics to University of Calicut, is a bonafide record of the studies carried out by her under my supervision in the Department of Mathematics, Sacred Heart College, Chalakudy. This report has not been submitted anywhere for any other degree of any other University or Board.

Rahul Rajan
Asst. Prof
St. Aloysius College
Ettumanoor.

HOD, DEPARTMENT OF MATHEMATICS
S. H. COLLEGE, CHALAKUDY

External Examiner

8/8/23

DR. SR. SMITHA ROSE C. G.
Assistant Professor,
Department of Mathematics,
St. Mary's College, Thrissur-20.

Chalakudy

06/07/2023

Ms.Amala George
(Supervising Guide)
Assistant Professor
Sacred Heart College
Chalakudy

Ms. Smitha Davis
(Head of the Department)
Assistant Professor
Sacred Heart College
Chalakudy

DEPARTMENT OF MATHEMATICS
SACRED HEART COLLEGE, CHALAKUDY
THRISSUR - 680307

CERTIFICATE

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Rahul Rajan
St. Aloysius College
Elthuruth

External Examiner

DR. SR. SMITHA ROSE C. G.
Assistant Professor,
Department of Mathematics,
St. Mary's College, Thrissur-20.

Chalakudy

06/07/2023

Ms. Smitha Davis

(Supervising Guide)

Assistant Professor

Sacred Heart College

Chalakudy

HOD, DEPARTMENT OF MATHEMATICS
S. H. COLLEGE, CHALAKUDY

Ms. Smitha Davis

(Head of the Department)

Assistant Professor

Sacred Heart College

Chalakudy

DEPARTMENT OF MATHEMATICS
SACRED HEART COLLEGE, CHALAKUDY
THRISSUR - 680307

CERTIFICATE

This is to certify that the dissertation entitled **"THE THEORY OF MATRICES IN NUMERICAL ANALYSIS "** submitted by **Ms. SNEHA SHAJI** (Reg. No. SHAVMMS017) in partial fulfillment of the requirements for the M.Sc. degree in Mathematics to University of Calicut, is a bonafide record of the studies carried out by her under my supervision in the Department of Mathematics, Sacred Heart College, Chalakudy. This report has not been submitted anywhere for any other degree of any other University or Board.

HOD, DEPARTMENT OF MATHEMATICS
S. H. COLLEGE, CHALAKUDY

External Examiner	Dr. Vijitha Mukundan	Ms. Smitha Davis
	(Supervising Guide)	(Head of the Department)
DR. SR. SMITHA ROSE C. G.	Assistant Professor	Assistant Professor
Assistant Professor, Department of Mathematics, St. Mary's College, Thrissur-20.	Sacred Heart College	Sacred Heart College
Chalakudy	Chalakudy	Chalakudy
06/07/2023		

Rahul Rajan
Asst. Prof,
St. Aloysius College E Ithumuth

SOIL ANALYSIS AS A TOOL FOR DIAGNOSIS OF NUTRITIONAL DISORDER IN MANGOSTEEN

Submitted to the University of Calicut in Partial fulfillment ofthe degree of

MASTER OF SCIENCE IN CHEMISTRY

Submitted by

MAYADEVI V M

REGISTER NO: SHAVMCH009



Department of chemistry

Sacred heart college ,chalakudy

2023

Dr.MANOJ A.L
Assistant Professor
Research Department Of Chemistry
St.Joseph's College,Irinjalakuda

Meghe. P.M.
Assistant professar.
Mother Arts and sciencecollege.

Neethu Sunny
Assistant professor
Carmel college, Mala

DEPARTMENT OF CHEMISTRY
Sacred heart college Chalakudy

CERTIFICATE

This is to certify that the project work entitled "Soil Analysis as a tool for Diagnosis of nutritional disorder in mangosteen" is a record of original work done independently by Mayadevi V.M register no: SHAVMCH009 in the partial fulfillment of the requirement for the award of degree of MSC Chemistry of University of Calicut. I further certify that no part of this dissertation has been submitted earlier for the award of any degree or institution.

Chalakudy
Date:

Dr. Santhosh Paul
Head of the Dept. chemistry
Sacred Heart College
Chalakudy

CERTIFICATE

This is to certify that the project entitled "Soil analysis as a tool to diagnose nutritional disorder in mangosteen " is the bonafide report of original workcarried out by Ms Mayadevi.V.M(SHAVMCH009) Sacred Heart College Chalakudy in the department of Agronomic Research Station Chalakudy,under the guidance of Dr Mini Abraham, Professor (Agronomy)as a part of her curriculm.

No part of the work reported in the project has been presented for any degree from any other institutions.

Dr Mini Abraham,

Professor

Dr. MINI ABRAHAM
Professor (Agron)
Kerala Agricultural University

(Head of the department)

PROCESS STANDARDISATION AND PHARMACOGNOSTIC EVALUATION OF AN AYURVEDIC DRUG, *YAVANYARKA*

Dissertation submitted to the University of Calicut in partial; fulfilment of the requirement for the award of the degree of

MASTER OF SCIENCE IN CHEMISTRY

BY

ANSAMOL K SHOJAN

REGISTERED NUMBER SHAVMCH003



POST GRADUATE DEPARTMENT OF CHEMISTRY

SACRED HEART COLLEGE, CHALAKUDY

Under the supervision of

DR. ANITHA R

Biochemist

Research and development wing

Oushadhi

The pharmaceutical corporation (IM) Kerala limited

Kuttanellur ,Thrissur

Dr. MANOJ A.L
Assistant Professor
Research Department Of Chemistry
Joseph's College, Irinjalakuda

Megha.P.M.
Asst. professor.
Mother Arts and science College
Peruvallur.

Neethu Sunny
Asst. Professor
Carmel college, Mala

The Pharmaceutical Corporation
(Indian Medicines) Kerala Ltd.
(A Government of Kerala Undertaking)
Kuttanellur P.O., Thrissur
Kerala - 680 014

Oushadhi
ഔഷധി

ദി ഫാർമസ്യൂട്ടിക്കൽ കോർപ്പറേഷൻ
(ഇന്ത്യൻ മെഡിസിൻസ്) കേരള ലിമിറ്റഡ്
(ഒരു കേരള സർക്കാർ സ്ഥാപനം)
കുട്ടനെല്ലൂർ പി.ഒ., തൃശൂർ
കേരളം - 680 014

E4-41/2020

04.08.2023

CERTIFICATE

This is to certify that **Ms.Ansamol K Shojan , M.Sc Chemistry** student of Post Graduate Department of Chemistry, Sacred Heart College, Chalakudy has completed a Project titled **"Process Standardisation and Pharmacognostic Evaluation of an Ayurvedic Drug, Yavanyarka"** in The Pharmaceutical Corporation (IM) Kerala Limited, Kuttanellur, Thrissur 01st April 2023 to 31st May 2023.

Her character and conduct during the period has been found good.

Oushadhi

General Manager

PG DEPARTMENT OF CHEMISTRY

Sacred heart college, Chalakudy

CERTIFICATE

This is to certify that the dissertation entitled **"PROCESS STANDARDISATION AND PHARMACOGNOSTIC EVALUATION OF AN AYURVEDIC DRUG, *YAVANYARKA* "**is a bonafide record of the research work carried out by **ANSAMOL K SHOJAN** under the guidance of **Dr. ANITHA R** Biochemist, Research and Development Wing, Oushadhi, Thrissur for the partial fulfilment for the degree of Master of Science in Chemistry, Calicut University Sacred Heart College Chalakudy,Kerala.

CHALAKUDY

DATE:

DR SANTHOSH PAUL

HEAD OF THE DEPARTMENT OF CHEMISTRY

SACRED HEART COLLEGE

CHALAKUDY

SYNTHESIS AND CHARACTERISATION OF POLYSTYRENE – COTTON FABRIC COMPOSITE

Submitted to the University of Calicut in Partial fulfillment of the degree

MASTER OF SCIENCE IN CHEMISTRY

Submitted by

AISWARYA MARIYA

REGISTER NO: SHAVMCH001



Department of Chemistry

Sacred Heart College, Chalakudy

2023

Dr.MANOJ A.L
Assistant Professor
Research Department Of Chemistry
St.Joseph's College,Irinjalakuda

Meghe P M
Asst professor
Mother Arts and Science College, Peruvallur.

Neethu Sunny
Assistant Professor
Carmel college (Autonomous), Mala.

PG DEPARTMENT OF CHEMISTRY

Sacred Heart College Chalakudy

CERTIFICATE

This is to certify that the project work entitled ***"SYNTHESIS AND CHARACTERISATION OF POLYSTYRENE- COTTON FABRIC COMPOSITE"*** is record of original work done independently by **AISWARYA MARIYA** Register No: **SHAVMCH001** in the partial fulfillment of the requirement for the award of degree MSc.Chemistry, University of Calicut. I further certify that no part of this dissertation has been submitted earlier for the award of any degree or institution.

Chalakudy

Date: 04/08/2023

Dr.Santhosh Paul

Head of Dept.Chemistry

Sacred Heart College Chalakudy

Head of the Department
Department of Chemistry
Sacred Heart College Chalakudy

Department of Chemistry
Sacred Heart College
Chalakudy

Department of Polymer Science & Rubber Technology
പോളിമർ – റബ്ബർ ശാസ്ത്ര സാങ്കേതിക വിഭാഗം
ISO 9001 : 2015 Certified
Cochin University of Science & Technology
കൊച്ചി ശാസ്ത്ര സാങ്കേതിക സർവ്വകലാശാല

Professor & Head

DPR1.18/HOD/23-24

29.07.2023

CERTIFICATE

This is to certify that the project work titled **" Synthesis and characterisation of polystyrene-cotton fabric composite"** is the bonafide report of original work carried out by Ms. Aiswarya Mariya, (Reg.No : SHAVMCH001) Sacred Heart College, Chalakudy in the Department of Polymer Science & Rubber Technology (PS & RT), CUSAT, under the guidance of Dr. Prasanth R and Dr. Sari P.S., during the period from 1st April, 2023 to May 31 ,2023 as a part of her curriculum.

No part of the work reported in the Project has been presented for any degree from any other institution.

DEPARTMENT OF POLYMER SCIENCE AND RUBBER TECHNOLOGY
COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
KOCHI-682 022

Dr. Prasanth R
HEAD OF THE DEPARTMENT

The Head
Dept. of Polymer Science and Rubber Technology
Cochin University of Science and Technology
Kochi - 22

PREPARATION OF BIODEGRADABLE POLYMERS FROM STARCH OF VARIOUS VEGETABLES

A Project Work Done And Submitted To The Department Of Chemistry Sacred Heart College, Chalakudy

By

Manjima Sanil [SHAUSCH021]

Megha P P [SHAUSCH022]

Pavithra R Menon [SHAUSCH023]

Sandra M A [SHAUSCH024]

Sreelakshmi E K [SHAUSCH025]

As partial fulfillment of the requirement for the award of the BSc Degree in Chemistry

Dept. Of Chemistry

Sacred Heart College, Chalakudy

Thrissur -680307

(Affiliated to the University of Calicut)

Re-accredited by NAAC with A+ grade in 2023

SACRED HEART COLLEGE, CHALAKUDY

(Affiliated to Calicut University)

(Re-accredited by NAAC with A+ grade)

Project Report in Chemistry (Core Course)

PRODUCTION OF BIODEGRADABLE PLASTICS

NAME: Group 5

CLASS: BSc Chemistry VI Semester

YEAR:2020-2023

Certified that this is a bonafied record of project work done by group 5 in this laboratory.

Project supervisor

(Dr. Laina A L)

18/04/23

Head of Department

(Dr. Santhosh Paul)

Department of Chemistry
Sacred Heart College
Chalakudy

DECLARATION

We hereby declare that this project report titled " PREPARATION OF BIODEGRADABLE POLYMERS FROM STARCH OF VARIOUS VEGETABLES " is a bonafide work done by our group under the guidance of Dr.Laina A L ,Department of Chemistry ,Sacred Heart College Chalakudy. We also declare that this work has not previously submitted for the award of any other academic fellowship or any other university or board.

March 2023

Chalakudy

INFLUENCE OF NANOCELLULOSE ON THE PROPERTIES OF NBR RUBBER

Submitted to the University of Calicut in Partial fulfillment of the degree of

MASTER OF SCIENCE IN CHEMISTRY

Submitted by

AKHILA M S

REGISTER NO: SHAVMCH002



Department of Chemistry

Sacred Heart College, Chalakudy

2023

Dr. MANOJ A.L
Assistant Professor
Research Department Of Chemistry
St. Joseph's College, Irinjalakuda

Megha. P.M.
Asst. professor
Mother Arts and science college.

Neethu Sunny
Assistant Professor
Carmel college, Mala

DEPARTMENT OF CHEMISTRY
Sacred heart college chalakudy

CERTIFICATE

This is to certify that the project work entitled "Influence of Nano cellulose on the properties of NBR rubber" is a record of original work done independently by Akhila M S register no: SHAVMCH002 in the partial fulfillment of the requirement for the award of degree of MSC Chemistry of University of Calicut. I further certify that no part of this dissertation has been submitted earlier for the award of any degree or institution.

Chalakudy
Date:

Dr. Santhosh Paul
Head of the Dept. chemistry
Sacred Heart College
Chalakudy

Head of the Department
Department of Chemistry
Sacred Heart College Chalakudy

Department of Chemistry
Sacred Heart College
Chalakudy

Rubber Park

J. J. Murphy Research Centre
(A Rubber Park India Initiative)
1 A, "Kautileeyam", Rubber Park, Valayanchirangara,
Ernakulam - 683 556, Kerala, India
Ph/Fax (0484) 2655610, 2657218, 2655548
E-mail dr@rubberparkindia.org, drrubberpark@gmail.com
Website www.rubberparkindia.org

RP/R/PR/ 16632

07.08.2023

CERTIFICATE

Certified that this project report titled **"INFLUENCE OF NANOCELLULOSE ON THE PROPERTIES OF NBR RUBBER"** is the bonafide work of **Miss. AKHILA M. S.** (Register No.SHAVMCH002), **M.Sc Chemistry** student of **SACRED HEART COLLEGE, Chalakudy** who carried out the project under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Supervising guide

07.08.2023

J.J. MURPHY RESEARCH CENTRE

External: Dr. DILEEP P.

Dr. Dileep P
Asst. Director (JJ MRC)
Rubber Park India (P) Ltd.
Ernakulam - 6835 56

Preparation and study of Zinc oxide Nanoparticles from chaste tree leaves.

Submitted to the University of Calicut in partial Fulfillment of the degree of

MASTER OF SCIENCE IN CHEMISTRY

Submitted by

JEENA CHANDRAN

REGISTER NO: SHAVMCH006



Department of chemistry

Sacred Heart college, chalakudy

2023

Dr. MANOJ A.L
Assistant Professor
Research Department Of Chemistry
St. Joseph's College, Irinjalakuda

Meghe. P.M.
Assistant professor.
Mother Arts and science college
Peruvallur.

Neethu Sunny
Assistant professor
Carmel college,
Mala.

DEPARTMENT OF CHEMISTRY

Sacred Heart college chalakudy

CERTIFICATE

This is to certify that the project entitled "preparation and study of zinc oxide Nano particles from chaste leaves" submitted by JEENA CHANDRAN (Reg no. SHAVMCH006)is a bonafide record of project work carried out by the author under my supervision, in partial fulfillment of the requirements for the degree of Master of science in chemistry from Calicut University.

Chalakudy

Date

Guided by

Dr. Santhosh Paul

Head of the department of chemistry

Project examiners:

Department of Chemistry
Sacred Heart College
Chalakudy

Head of the Department
Department of Chemistry
Sacred Heart College Chalakudy

SYNTHESIS OF ZnO NANOPARTICLES AND IT'S ANTIFUNGAL ACTIVITY IN PAINT

Submitted to the University of Calicut in Partial fulfillment of the degree of

MASTER OF SCIENCE IN CHEMISTRY

Submitted by

SREELAKSHMI A S

REGISTER NO: SHAVMCH012



Department of Chemistry

Sacred Heart College,Chalakudy

2023

Dr. MANOJ A.L
Assistant Professor
Department Of Chemistry
St. Joseph's College, Irinjalakuda

Meghe. P.M
Assistant professor
Mother Arts and science college

Neethu Sunny
Assistant professor
Carmel college, Mala

PG DEPARTMENT OF CHEMISTRY
Sacred heart college chalakudy

CERTIFICATE

This is to certify that the project work entitled "Synthesis of ZnO nanoparticles and its antifungal activity in paint" is a record of original work done independly by Sreelakshmi A S register no: SHAVMCH012 in the partial fulfillment of the requirement for the award of degree of MSC Chemistry of University of Calicut. I further certify that no part of this dissertation has been submitted earlier for the award of any degreeor institution

Chalakudy
Date:

Dr.Santhosh paul
Head of dept. Chemistry
Secred heart college
chalakudy

Head of the Department
Department of Chemistry
Sacred Heart College Chalakudy

S.H. College Chalakudy

LEAF ANALYSIS AS A TOOL TO DIAGNOSE FOLIAR NECROSIS IN RAMBUTAN

Submitted to the University of Calicut in Partial fulfillment of the degree of

MASTER OF SCIENCE IN CHEMISTRY

NIVEDHYA RAJEESH

REGISTER NO: SHAVMCH011



Department of Chemistry Sacred Heart College, Chalakudy

2023

Dr. MANOJ A.L
Assistant Professor
Research Department Of Chemistry
St.Joseph's College, Irinjalakuda

Megha. P.M.
Assistant professor.
Mother Arts and Science college

Neethu Sunny
Assistant Professor
Carmel college, Mala

DEPARTMENT OF CHEMISTRY

Sacred heart college

chalakudy

CERTIFICATE

This is to certify that the project work entitled "LEAF ANALYSIS AS A TOOL TO DIAGNOSE FOLIAR NECROSIS IN RAMBUTAN" is a record of original work done independently by NIVEDHYA RAJEESH register no: SHAVMCH011 in the partial fulfillment of the requirement for the award of degree of M.Sc. Chemistry of University of Calicut. I further certify that no part of this dissertation has been submitted earlier for the award of any degree or institution.

Chalakudy
Date

Dr. Santhosh Paul
Head of the Dept. chemistry
Sacred Heart College
Chalakudy

CERTIFICATE

This is to certify that the project work entitled "LEAF ANALYSIS AS A TOOL TO DIAGNOSE FOLIAR NECROSIS IN RAMBUTAN" is a record of original work done independently by NIVEDHYA RAJEESH register no: SHAVMCH011 in the partial fulfillment of the requirement for the award of degree of M.Sc. Chemistry of University of Calicut,under the guidence of Dr Mariya M S, Assistant professor,Agronamic research station.,chalakudy,as a part of her curriculum. I further certify that no part of this dissertation has been submitted earlier for the award of any degree or institution.

Dr Mariya M S

Assistant professor

Dr. MARIYA DAINY M.S.
Assistant Professor
(Soil Sci. & Agrl. Chemistry)
Agronomic Research Station
Chalakudy - 680 307
Kerala Agricultural University

SYNTHESIS AND CHARACTERISATION OF POLYSTYRENE – COTTON FABRIC COMPOSITE

Submitted to the University of Calicut in Partial fulfillment of the degree

MASTER OF SCIENCE IN CHEMISTRY

Submitted by

MEERA K V

REGISTER NO: SHAVMCH010



Department of Chemistry

Sacred Heart College, Chalakudy

2023

Dr. MANOJ A.L
Assistant Professor
Research Department Of Chemistry
St. Joseph's College, Irinjalakuda

Megha. P. M.
Assistant professor.
Mother Arts and science college.

Neethu Sunny
Assistant Professor
Carmel college, Mala.

PG DEPARTMENT OF CHEMISTRY

Sacred Heart College Chalakudy

CERTIFICATE

This is to certify that the project work entitled ***"SYNTHESIS AND CHARACTERISATION OF POLYSTYRENE- COTTON FABRIC COMPOSITE"*** is record of original work done independently by **MEERA K V** Register No: **SHAVMCH010** in the partial fulfillment of the requirement for the award of degree MSc.Chemistry ,University of Calicut. I further certify that no part of this dissertation has been submitted earlier for the award of any degree or institution.

Chalakudy

Date: 04/08/23

Dr.Santhosh Paul

Head of Dept.Chemistry

Sacred Heart College Chalakudy

Department of Chemistry
Sacred Heart College
Chalakudy

Head of the Department
Department of Chemistry
Sacred Heart College Chalakudy

Department of Polymer Science & Rubber Technology
പോളിമർ - റബ്ബർ ശാസ്ത്ര സാങ്കേതിക വിഭാഗം
ISO 9001 : 2015 Certified
Cochin University of Science & Technology
കൊച്ചി ശാസ്ത്ര സാങ്കേതിക സർവ്വകലാശാല

Professor & Head

DPR1.18/HOD/23-24 29.07.2023

CERTIFICATE

This is to certify that the project work titled **" Synthesis and characterisation of polystyrene-cotton fabric composite"** is the bonafide report of original work carried out by Ms. Meera K. V. ,(Reg.No: SHAVMCH010) Sacred Heart College, Chalakudy in the Department of Polymer Science and Rubber Technology (PS & RT), CUSAT, under the guidance of Dr. Prasanth R and Dr. Sari P. S., during the period from 1st April, 2023 to May 31, 2023 as a part of her curriculum.

No part of the work reported in the Project has been presented for any degree from any other institution.

DEPARTMENT OF POLYMER SCIENCE AND RUBBER TECHNOLOGY
COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
KOCHI-682 022

Dr.Prasanth R
HEAD OF THE DEPARTMENT

The Head
Dept. of Polymer Science and Rubber Technology
Cochin University of Science and Technology
Kochi - 22

PREPARATION AND STUDY OF ANTIBACTERIAL ACTIVITY OF ZINC OXIDE NANOPARTICLES FROM NEEM LEAVES

Submitted to the University of Calicut in Partial Fulfillment of the degree of

MASTER OF SCIENCE IN CHEMISTRY

Submitted by

KRISHNAPRIYA UNNIKRISHNAN

REGISTER NO: SHAVMCH007

Department of Chemistry

Sacred Heart College, Chalakudy

2023

Dr. MANOJ A.L
Assistant Professor
Research Department Of Chemistry
St.Joseph's College, Irinjalakuda

Megha. P M.
Assistant professor
Mother Arts and science College, Peruvallur.

Neethu Sunny
Assistant Professor
Carmel College, Mala.

DEPARTMENT OF CHEMISTRY

Sacred Heart College Chalakudy

CERTIFICATE

This is certified that the project entitled "Preparation and Study of Antibacterial activity of Zinc oxide Nanoparticles from Neem Leaves" submitted by KRISHNAPRIYA UNNIKRISHNAN (Reg. No :SHAVMCH007) is a bonafide record of project work carried out by the author under my supervision, in partial fulfillment of the requirement for the degree of Master of Science in Chemistry from Calicut University.

Chalakudy

Date:

Guided by

Dr. Santhosh Paul

Head of the Dept. of Chemistry

Sacred Heart College

Chalakudy

Project Examiners :

Department of Chemistry
Sacred Heart College
Chalakudy

Head of the Department
Department of Chemistry
Sacred Heart College Chalakudy

SOIL ANALYSIS AS A TOOL TO DIAGNOSE FOLIAR NECROSIS IN RAMBUTAN

Submitted to the University of Calicut in Partial fulfillment ofthe degree of

MASTER OF SCIENCE IN CHEMISTRY

MALAVIKA T P

REGISTER NO: SHAVMCH008



Department of Chemistry

Sacred Heart College, Chalakudy

2023

DEPARTMENT OF CHEMISTRY

Sacred heart college, Chalakudy

CERTIFICATE

This is to certify that the project work entitled "Soil analysis as a tool to diagnose foliar necrosis in Rambutan" is a record of original work done independently by Malavika T.P register no: SHAVMCH008 in the partial fulfillment of the requirement for the award of degree of M. Sc. Chemistry ofUniversity of Calicut. I further certify that no part of this dissertation has been submitted earlier for the award of any degree or institution.

Chalakudy
Date:

Dr. Santhosh Paul
Head of the Dept. chemistry
Sacred Heart College
Chalakudy

Dr.MANOJ A.L
Assistant Professor
Research Department Of Chemistry
St.Joseph's College,Irinjalakuda

Megha. P.M.
Assistant professor
Mother Arts and Science
Peruvallur.

Neethu Sunny.
Assistant Professor
Carmel college,
Mala.

CERTIFICATE

This is to certify that the project entitled "Soil analysis as a tool to diagnose foliar necrosis in Rambutan" is the bonafide report of original work carried out by Mr Malavika.T.P (SHAVMCH008) Sacred Heart College, Chalakudy in the department of Agronomic Research Station Chalakudy, under the guidance of Dr Mariya Dainy M. S , Assistant professor (Soil Science and Agricultural Chemistry)as a part of her curriculm.No part of the work reported in the project has been presented for any degree from any other institutions.

Dr Mariya Dainy M. S ,

Assistant professor

Dr. MARIYA DAINY M.S.
Assistant Professor
(Soil Sci. & Agrl. Chemistry)
Agronomic Research Station
Chalakudy - 680 307
Kerala Agricultural University

COMPARATIVE PHARMACOGNOSTIC EVALUATION OF DIFFERENT TYPES OF GUGGULU PREPARATIONS WITH RESPECT TO METHODS OF PURIFICATION

Dissertation submitted to the University of Calicut in partial fulfillment

Of the requirement for the award of the degree of

MASTER OF SCIENCE IN CHEMISTRY

BY

ASWATHI S

REGISTER NUMBER: SHAVMCH004



POST GRADUATE DEPARTMENT OF CHEMISTRY

Sacred Heart College, Chalakudy

Under the supervision of

Dr. ANITHA R

Biochemist

Research and Development Wing

Oushadhi

The Pharmaceutical Corporation (IM) Kerala Limited

Kuttanellur, Thrissur

Dr.MANOJ A.L
Assistant Professor
Research Department Of Chemistry
St. Joseph's College, Irinjalakuda

Meghe. P.M
Assistant professor.
Mother Arts and science
Peruvallur.

Neethu Sunny
Assistant Professor
Carmel college, Mala.

The Pharmaceutical Corporation
(Indian Medicines) Kerala Ltd.
(A Government of Kerala Undertaking)
Kuttanellur P.O., Thrissur
Kerala - 680 014

Oushadhi
ഔഷധി

ദി ഫാർമസ്യൂട്ടിക്കൽ കോർപ്പറേഷൻ
(ഇന്ത്യൻ മെഡിസിൻസ്) കേരള ലിമിറ്റഡ്
(ഒരു കേരള സർക്കാർ സ്ഥാപനം)
കുട്ടനെല്ലൂർ പി.ഒ., തൃശൂർ
കേരളം - 680 014

E4-41/2020

04.08.2023

CERTIFICATE

This is to certify that **Ms.Aswathi . S, M.Sc Chemistry** student of Post Graduate Department of Chemistry, Sacred Heart College, Chalakudy has completed a Project titled **"Comparative Pharmacognostic Evaluation of Different Types of Guggulu Preparation with Respect to Methods of Purification"** in The Pharmaceutical Corporation (IM) Kerala Limited, Kuttanellur, Thrissur 01st April 2023 to 31st May 2023.

Her character and conduct during the period has been found good.

The Pharmaceutical Corporation (Indian Medicines) Kerala Ltd. Oushadhi Thrissur 14

General Manager

PG DEPARTMENT OF CHEMISTRY

Sacred Heart College,Chalakudy

CERTIFICATE

This is to certify that the dissertation entitled **"COMPARATIVE PHARMACOGNOSTIC EVALUATION OF DIFFERENT TYPES OF GUGGULU PREPARATIONS WITH RESPECT TO METHODS OF PURIFICATION"** is a bonafide record of the research work carried out by **ASWATHI S, Sacred Heart College, Chalakudy**under the guidance of **Dr. ANITHA R** Biochemist, Research and Development Wing, Oushadhi, Thrissur for the partial fulfillment for the Degree of Master of Science in Chemistry, Calicut University, Kerala.

CHALAKUDY

DATE :

DR SANTHOSH PAUL

HEAD OF DEPARTMENT OF CHEMISTRY

SACRED HEART COLLEGE

CHALAKUDY

DEPOLYMERIZATION OF POLYETHYLENE TEREPHTHALATE

A Project work done and Submitted to The Department of Chemistry

Sacred Heart College Chalakudy

By

AHALYA V L (SHAUSCH001)

AISWARYA KRISHNAN L R (SHAUSCH002)

AISWARYA P R (SHAUSCH003)

AKHILA A B (SHAUSCH004)

AMRUTHA T K (SHAUSCH005)

As partial fulfillment of the requirements for the award of

BSc degree in Chemistry



Department Of Chemistry

Sacred Heart College, Chalakudy

Thrissur-680307

(Affiliated to Calicut University)

(NAAC reaccredited with 'A+' grade)

March 2023

WATER ANALYSIS

A Project work done and Submitted to The Department of Chemistry

Sacred Heart College Chalakudy

By

ANUPAMA K B (SHAUSCH006)

BIJI V I (SHAUSCH007)

HIBA U (SHAUSCH008)

JAISHNA E M (SHAUSCH009)

JEWEL JOHNY (SHAUSCH010)

As partial fulfillment of the requirements for the award of

BSc degree in Chemistry

Department Of Chemistry

Sacred Heart College, Chalakudy

Thrissur-680307

(Affiliated to Calicut University)

(NAAC reaccredited with 'A+' grade)

March 2023

"PREPARATION AND STUDY OF ANTIBACTERIAL ACTIVITY ZnO NANOPARTICLES FROM NEEM LEAVES"

A Project work done and Submitted to The Department of Chemistry

Sacred Heart College Chalakudy

By

JYOTHILAKSHMI A S (SHAUSCH011)

KRISHNAPRIYA C G (SHAUSCH012)

SHAHANAZ FATHIMA M M (SHAUSCH013)

SNEHA SHAJU (SHAUSCH014)

UTHARA T B (SHAUSCH015)

As partial fulfillment of the requirements for the award of

BSc degree in Chemistry

Department Of Chemistry

Sacred Heart College, Chalakudy

Thrissur-680307

(Affiliated to Calicut University)

(NAAC reaccredited with 'A+' grade)

March 2023

PRODUCTION OF BIODIESEL FROM VEGETABLE OIL

A Project Work Done and Submitted To The Department Of Chemistry Sacred Heart College, Chalakudy

by

Aleena Joshy [SHAUSCH016]

Aleena Joy [SHAUSCH017]

Anagha Sunil [SHAUSCH018]

Angel Feba [SHAUSCH019]

Aswathy Pradeep [SHAUSCH020]

As partial fulfillment of the requirement for the award of the BSc Degree in Chemistry

Dept.of chemistry

Sacred Heart College,chalakudy

Thrissur-680307

(Affiliated to the University of Calicut)

Re-accredited by NAAC with A+ grade in 2023

Department of Computer Science