

**PREPARATION OF SOAPS USING VARIOUS BLENDS AND  
DETERMINATION OF THEIR TFM**

**DISSERATION**

Submitted to the University of Calicut for the partial fulfilment of the  
requirement for the award of the Degree

**BACHELOR OF SCIENCE IN CHEMISTRY**

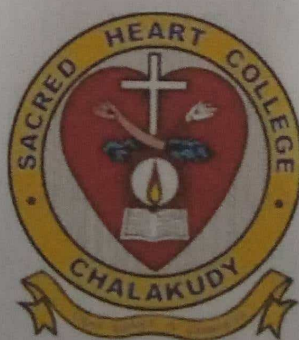
AISWARYA C R SHAOSCH001

AMMU P D SHAOSCH002

ANILA BASTIAN K SHAOSCH003

ANJANA K B SHAOSCH004

ANU JOJU SHAOSCH005



*Vahret*

*Chandran*

*28/4/19*

DEPARTMENT OF CHEMISTRY

**SACRED HEART COLLEGE CHALAKUDY**

**(Re-accredited by NAAC with 'A+' grade)**

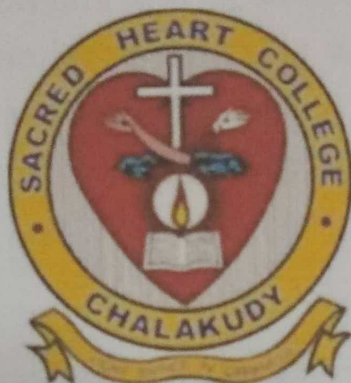
**THRISSUR 680307**

**SACRED HEART COLLEGE**

**CHALAKUDY**

**(Affiliated to Calicut University)**

**(NAAC Reaccredited with 'A+' grade)**



Project Report in Chemistry (Core Course)

**PREPARATION OF SOAPS USING VARIOUS  
BLENDS AND DETERMINATION OF THEIR TFM**

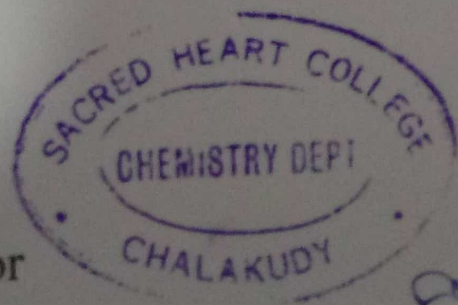
NAME : GROUP 1

CLASS: BSc CHEMISTRY VI SEMESTER

YEAR: 2014 – 2017

Certified that this is a bona fide record of a project work done  
by Group 1 in this laboratory

*MJ*  
Project Supervisor  
( Prof. Mariya Jose)



*MJ*  
Head of Department  
( Prof. Mariya Jose)



COMPARISON OF NICOTINE CONTENT IN SMOKING TOBACCO  
AND NICOTEX

A Project work done and submitted to the Department of  
Chemistry

SACRED HEART COLLEGE, CHALAKUDY

(Re-accredited by NAAC with 'A+' grade)

Submitted By

As a partial fulfilment of the requirement for the

Award of BSc Degree in Chemistry

ANUSREE K C - SHAOSCH006

ATHIRA K V - SHAOSCH007

ATHIRA M C - SHAOSCH008

CHRISTY M V - SHAOSCH009

DEVIKA T S - SHAOSCH010



Dept. of Chemistry

Sacred Heart College, Chalakudy

*Valued  
for  
28/11/17*

THILAKAN M.K  
ASSISTANT PROFESSOR IN CHEMISTRY  
K.K.T.M. COLLEGE OF ENGINEERING  
KODURGALLUR - 580 002

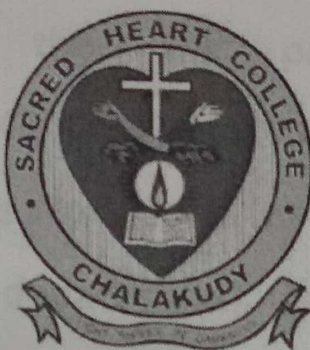
(Affiliated to the University of Calicut)

**SACRED HEART COLLEGE**

**CHALAKUDY**

**(Affiliated to Calicut University)**

**(NAAC Reaccredited with 'A+' grade)**



Project Report in Chemistry ( core course)

## **COMPARISON OF NICOTINE CONTENT IN SMOKING TOBACCO AND NICOTEX**

**Name: Group 2**

**Class: BSc Chemistry VI Semester**

**Year: 2014 - 2017**

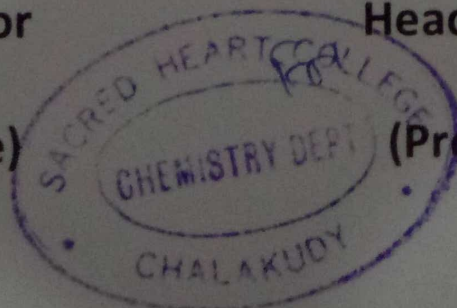
**Certified that this is a bonafide record of project work done by  
group 2 in this laboratory.**

*From*  
*MJ*  
**Project Supervisor**

**(Prof. Maria Jose)**

*MJ*  
**Head of Department**

**(Prof. Maria Jose)**





# **WATER PURIFICATION USING ACTIVATED CHARCOAL AND PURITY ANALYSIS**

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

**By**

**Eva Sneha Francis [SHA0SCH011]**

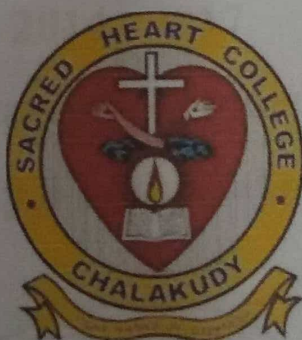
**KripaMariya Thomas [SHAOSCH012]**

**Livina Salam [SHAOSCH013]**

**Liya Joseph [SHAOSCH014]**

**Mariya P.T [SHAOSCH015]**

**As partial fulfilment of the requirement for the award of BSc Degree  
in chemistry.**



**Dept. of Chemistry**

**Sacred Heart College, Chalakudy**

**Thrissur-680307**

**(Affiliated to Calicut University)**

**(NAAC reaccredited with 'A+' grade)**

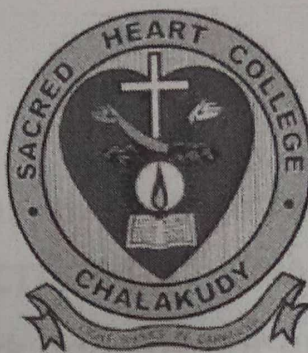
**March 2017**

*Valmed  
Thilakan  
28/4/17*

**THILAKAN.M.K**  
**ASSISTANT PROFESSOR IN CHEMISTRY**  
**K.K.T.M. GOVT. COLLEGE,**  
**KODUNGALLUR-686003**



**SACRED HEART COLLEGE  
CHALAKUDY**  
(Affiliated to Calicut University)  
(NAAC Reaccredited with 'A+' grade)



Project Report in Chemistry ( core course)

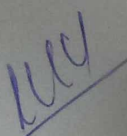
**WATER PURIFICATION USING ACTIVATED  
CHARCOAL AND PURITY ANALIYSIS**

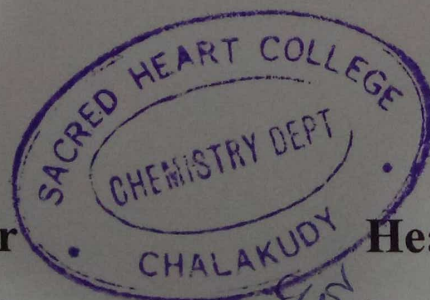
**Name: Group 3**

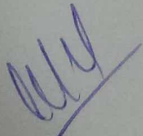
**Class: BSc Chemistry VI Semester**

**Year: 2014 - 2017**

**Certified that this is a bonafide record of project work done  
by group 3 in this laboratory.**

  
Project Supervisor  
(Dr.Santhoshpaul)



  
Head of Department  
(Prof.Mariya Jose)



**CORROSION INHIBITION EFFICIENCY OF  
HENNA (LAWSONIA INERMIS) ON  
MILD STEEL BY WEIGHT LOSS METHOD**

**PROJECT REPORT SUBMITTED TO THE UNIVERSITY OF CALICUT IN PARTIAL  
FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF DEGREE OF  
BACHELOR OF SCIENCE IN CHEMISTRY**

**BY**

MUHSINA K U	SHAOSCH016
NIVYA VARGHESE	SHAOSCH017
PRAVEENA C P	SHAOACH018
RAGILA RAMACHANDRAN K	SHAOSCH019
SHINI JOSE	SHAOSCH020



**DEPARTMENT OF CHEMISTRY  
SACRED HEART COLLEGE CHALAKUDY  
THRISSUR  
APRIL 2017**

*Valmed*  
*Thilakan*  
*28/4/17*  
**THILAKAN.M.K**  
**ASSISTANT PROFESSOR IN CHEMISTRY**  
**K.K.T.M. GOVT. COLLEGE, PULUT**  
**KODUNGALLUR-680 663**

# CERTIFICATE

This to certify that this project work entitled "CORROSION INHIBITION EFFICIENCY OF HENNA (LAWSONIA INERMIS) ON MILD STEEL BY WEIGHTLWEIGHT LOSS METHOD" submitted to the University of Calicut in partial fulfillment requirements for the award of the degree of BACHELOR OF SCIENCE IN CHEMISTRY is a record of original project work done by

MUHSINA KU

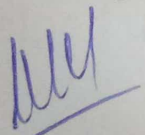
NIVYA VARGHESE

PRAVEENA C P

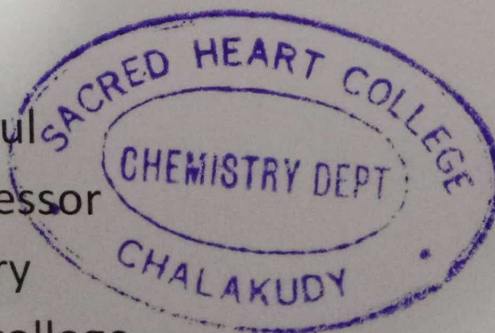
RAGILA RAMACHANDRAN K

SHINI JOSE

during the period of our study in the Department of Chemistry, Sacred Heart College Chalakudy under my supervision and guidance.

  
Project supervisor

Dr.Santhoshpaul  
Assistant professor  
Dept.Chemistry  
Sacred heart college  
Chalakudy



  
MS.Maria Jose

Associate prof.  
HOD.  
Sacred Heart College  
Chalakudy

  
Chemistry  
S.H. College  
Chalakudy



# DETERMINATION OF CAFFEINE IN VARIOUS PRODUCTS

A Project Work Done And Submitted To The Department Of  
Chemistry

Sacred Heart College, Chalakudy

By

Alphonse Manuel [SHA0SCH026]

Anjana E S [SHAOSCH027]

Anju Krishna [SHAOSCH028]

Anliya George [SHAOSCH029]

Arya A R [SHAOSCH030]

*As partial fulfilment of the requirement for the award of BSc Degree in  
chemistry.*



Dept. of Chemistry

Sacred Heart College, Chalakudy

Thrissur-680307

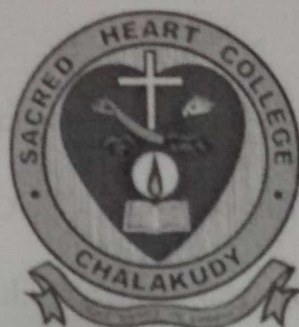
(Affiliated to Calicut University)

(NAAC reaccredited with 'A+' grade)

March 2017

Valued  
Thilakan  
28/4/17  
THILAKAN.M.K  
ASSISTANT PROFESSOR IN CHEMISTRY  
K.M.T.M. GOVT. COLLEGE, PU-LUF,  
KODURGALLUR-680 663

**SACRED HEART COLLEGE**  
**CHALAKUDY**  
(Affiliated to Calicut University)  
(NAAC Reaccredited with 'A+' grade)



Project Report in Chemistry (core course)

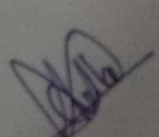
**DETERMINATION OF CAFFEINE**  
**IN VARIOUS PRODUCTS**

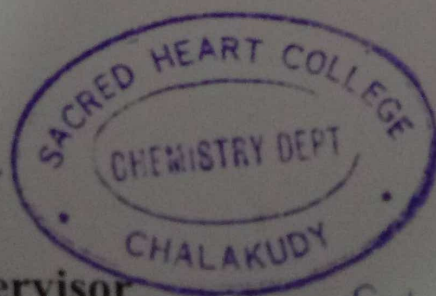
Name: Group 6

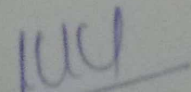
Class: BSc Chemistry VI Semester

Year: 2014 - 2017

**Certified that this is a bonafide record of project work done  
by group 6 in this laboratory.**

  
Project Supervisor  
(Ms. Anila Paul)



  
For Head of Department  
(Prof. Maria Jose)



# SACRED HEART COLLEGE ,CHALAKUDY

(Affiliated to the University of Calicut )

(Re-accredited by NAAC 'A+' grade)

## PROJECT REPORT IN CHEMISTRY

(CORE COURSE)

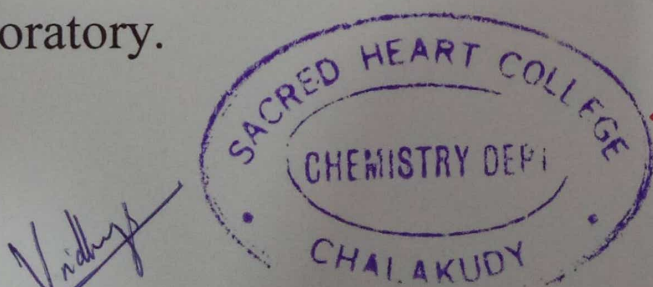
### STUDY OF ADSORPTION ON DIFFERENT TYPES OF CHARCOALS

- 1.Geethu Krishnan (SHAOSCH037) 2. Mariya Poulouse (SHAOSH038 )  
3. Ranjima C M (.SHAOSCH039) 4.Sini Sebastian T (SHAOSCH040)  
5. Surya K S (SHAOSCH041) 6.Thushara Johny (SHAOSCH042)

Class: BSc chemistry

Year: 2014-2017

Certified that this is a bonafied project report of Group 8 in this laboratory.



Ms. Vidhya Thomas  
(Project supervisor)

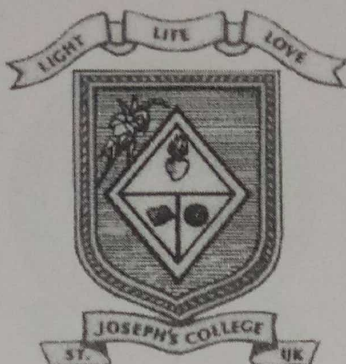
Prof. Maria Jose  
(Department Head)

For

*D. Maria Antony - e*

DEPARTMENT OF CHEMISTRY

St. Joseph's College Irinjalakuda



CERTIFICATE

I hereby certify that this is the bonafide record of the project work entitled “**Catalysis By Neat And Zeolite Encapsulated Cobalt (II) Complex In Cyclohexanol Oxidation-A Comparative Study**” has successfully carried out by Anna.Vijo (Reg.No.SHAPMCH001) of M.Sc Chemistry course 2015-2017 in the partial fulfillment of the requirement for the degree of master of science in Chemistry from Calicut university. This was carried out under my guidance and supervision.

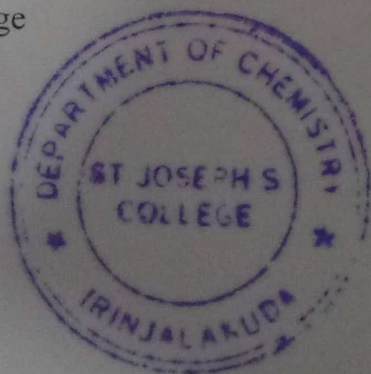
Irinjalakuda

24-9-2017

Dr. Jessy Emmanuel  
Head of the Department  
Department of Chemistry  
St. Joseph's college  
Irinjalakuda

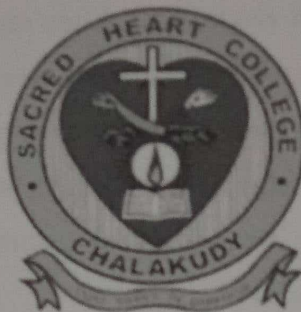
Guided By

Dr. Pearly Sebastian Chittilappilly  
Former Associate Professor  
Department of Chemistry  
St. Joseph's college  
Irinjalakuda





DEPARTMENT OF CHEMISTRY  
Sacred Heart College Chalakudy



CERTIFICATE

This to certify that the bonafide record of the project work entitled "Catalysis By Neat And Zeolite Encapsulated Cobalt (II) Complex In Cyclohexanol Oxidation-A Comparative Study" has successfully carried out by Ms. Anna. Vijo (Reg.No.SHAPMCH001) under the supervision and guidance of Dr. Pearly Sebastian Chittilappilly, Former Associate Professor, St. Joseph's college, Irinjalakuda. This work is carried out in partial fulfillment of the requirement for the award of degree Master of Science in Chemistry, University of Calicut during the academic year 2015-2017.

Irinjalakuda

24-9-2017



Forwarded by,

Ms. Mariya Jose

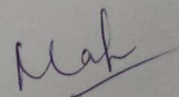
Head of the Dept. of Chemistry

Sacred Heart College

Chalakudy

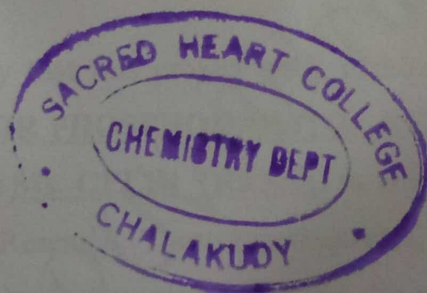
## CERTIFICATE

This is to certify that the dissertation entitled “**SYNTHESIS OF ADVANCED INTERMEDIATES FOR PHOSPHOINOSITOL SYNTHESIS**” is an authentic record of the project work done by CELIN TRESSA (SHAPMCH002) under the supervision and guidance of Dr. K.M. Sureshan , Associate Professor, Department of Chemistry, Indian Institute of Science Education and Research, Thiruvananthapuram, in fulfilment of requirements for the award of degree of Master of Science in Chemistry during the period of her study in Department of Chemistry, Sacred Heart College, Chalakudy.



Head of the Department

Department of Chemistry



Place: Chalakudy

Date:





# INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH

THIRUVANANTHAPURAM

SCHOOL OF CHEMISTRY

## CERTIFICATE

This is to certify that this project work entitled "SYNTHESIS OF ADVANCED INTERMEDIATES FOR PHOSPHONOSITOL SYNTHESIS" is an authentic record of the work carried out by Ms. CELIN TRESSA in School of Chemistry, Indian Institute of Science Education and Research, Thiruvananthapuram, under my supervision and guidance and no part thereof has been presented earlier for the award of any other Degree, Diploma, Fellowship or Associate ship etc.

Thiruvananthapuram  
Date: 18-6-2016

Dr. K. M. Sureshan  
Project Supervisor



# DECLARATION



**CENTRE FOR BIOPOLYMER SCIENCE AND TECHNOLOGY (CBPST)**  
**A UNIT OF CIPET,**  
**OLD JNM CAMPUS, FACT TOWNSHIP,**  
**ELOOR, UDYOGAMANDAL P.O., KOCHI - 683501.**

## CERTIFICATE

This is to certify that the thesis entitled “**STUDIES ON THE PROPERTIES OF THE AMINE FUNCTIONALIZED MESOPOROUS SILICA REINFORCED POLY(LACTIC ACID) COMPOSITE SYSTEMS**” being submitted by *Dery Devassy (Reg No: SHAPMCH003), Department of Chemistry, Sacred Heart College, Chalakudy, Kerala - 680307, India* for the award of M.Sc degree has been carried out under my guidance. The work documented in this thesis has not been submitted to any other University or Institute for the award of any degree or diploma.

**(Dr. V. RaviBabu)**

Technical Officer

Centre for Biopolymer Science and Technology

(A Unit of CIPET)

Eloor, Kerala – 680307, India.

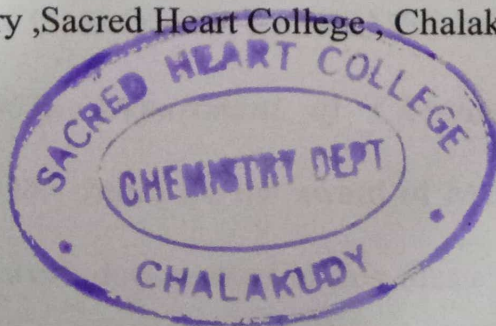


# CERTIFICATE

This is to certify that the dissertation entitled "STUDIES ON THE PROPERTIES OF THE AMINE FUNCTIONALIZED MESOPOROUS SILICA REINFORCED POLY (LACTIC ACID) COMPOSITE SYSTEMS" is an authentic record of the project work done by Dery Devassy (SHAPMCH003) under the supervision and guidance of Dr. RAVI BABU VALAPA, CENTER FOR BIOPOLYMER SCIENCE AND TECHNOLOGY (CBPST), A UNIT OF CIPET, KOCHI in partial fulfillment of the requirement of the award of the Degree of Master of science in pure chemistry during the period of her study in department of chemistry, Sacred Heart College, Chalakudy.

Place: Chalakudy

Date: 4-10-2017

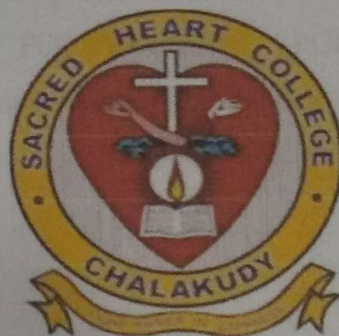


Department of Chemistry

*Mak*  
Faculty in charge

# DEPARTMENT OF CHEMISTRY

Sacred Heart College Chalakudy

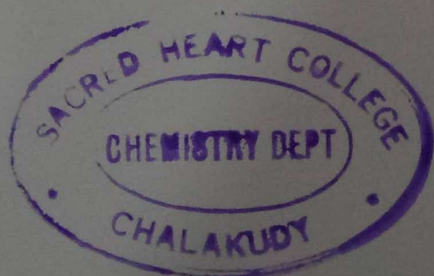


## CERTIFICATE

This is to certify that the dissertation entitled "A COMPARATIVE STUDY ON THE DIELECTRIC PROPERTIES OF POLYSTYRENE-POLYPYRROLE BLENDS" is an authentic record of the project work done by HEJU ANTONY (Reg. No. SHAPMCH004) under the supervision and guidance of Dr.Santhosh Paul, Associate Professor, Sacred Heart college, Chalakudy and in partial fulfillment of the requirements for the award of degree of Master of Science in chemistry during the period of her study in Department of Chemistry , Sacred Heart College, Chalakudy

Place: Chalakudy

Date: 4/10/2017



Head of the Department

Department of Chemistry

Sacred Heart College

Chalakudy

Submitted for viva voce held at sacred Heart College, Chalakudy





CENTRE FOR BIOPOLYMER SCIENCE AND TECHNOLOGY (CBPST)  
A UNIT OF CIPET,  
OLD JNM CAMPUS, FACT TOWNSHIP,  
ELOOR, UDYOGAMANDAL P.O., KOCHI - 683501.

## CERTIFICATE

This is to certify that the thesis entitled "SYNTHESIS OF POLY(LACTIC ACID)-NANOCLAY COMPOSITE FILMS FOR SUSTAINABLE FOOD PACKING AND ITS CHARACTERIZATION" being submitted by *Jincy K.P (Reg No: SHAPMCH005)*, Department of Chemistry, Sacred Heart College, Chalakudy, Kerala - 680307, India for the award of M.Sc degree has been carried out under my guidance.

The work documented in this thesis has not been submitted to any other University or Institute for the award of any degree or diploma.

**(Dr. V. RaviBabu)**

Technical Officer

Centre for Biopolymer Science and Technology

(A Unit of CIPET)

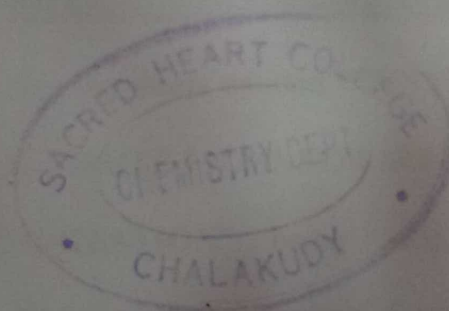
Eloor, Kerala - 680307, India.

## CERTIFICATE

This is to certify that the dissertation entitled "SYNTHESIS OF POLY(LACTIC ACID)-NANOCLAY COMPOSITE FILMS FOR SUSTAINABLE FOOD PACKING AND ITS CHARACTERIZATION" is an authentic record of the project work done by Jincy k.p (SHAPMCH005) under the supervision and guidance of DR RAVI BABU VALAPA, CENTER FOR BIOPOLYMER SCIENCE AND TECHNOLOGY (CBPST), A UNIT OF CIPET, KOCHI in partial fulfillment of the requirement of the award of the Degree of Master of science in pure chemistry during the period of her study in department of chemistry ,Sacred Heart College , Chalakudy .

Place: Chalakudy

Date: 4-10-2017



Department of Chemistry  
*Mah*  
Faculty in Charge





**SCIENCE CENTRE**

SOCIETY FOR SCIENCE AND STUDENTS

Methala, Kodungallur- 680669

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **MS.JOSITHA GEORGE**, M.Sc Chemistry student of SACRED HEART COLLEGE CHALAKUDY has completed her project "PYROLYSIS OF POLYPROPYLENE AND THE ANALYSIS OF PYROLYTIC FUEL" at Science Centre, Kodungallur from 15-4-2017 to 31-5-2017. Her performance and conduct during the period was good.

She is committed, hardworking and punctual. We wish her all success in her future endeavors.

*Sreejith V.S*  
30/9/2017

Sreejith V.S

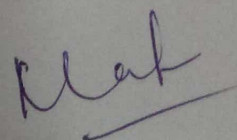
Director

Science Centre, Kodungallur



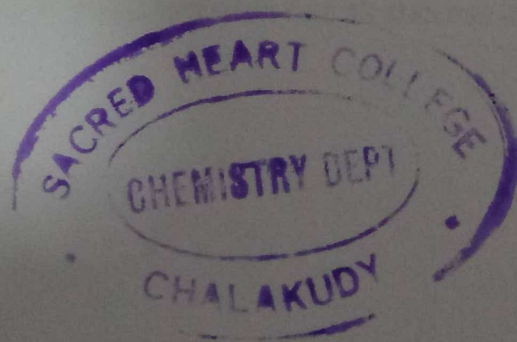
## CERTIFICATE

This is to certify that the dissertation entitled “**PYROLYSIS OF POLYPROPYLENE AND THE ANALYSIS OF PYROLYTIC FUEL**” is an authentic record of the project work done by JOSITHA GEORGE (REG.NO:SHAPMCH006) under the supervision and guidance of Mr.Sreejith V.S. (Director,Science Centre,Kodungallur) and in partial fulfillment of the requirements for the award of Degree of Master of Science in Chemistry during the period of our study in Department of Chemistry,Sacred Heart College, Chalakudy.



Head of the Department

Department of Chemistry



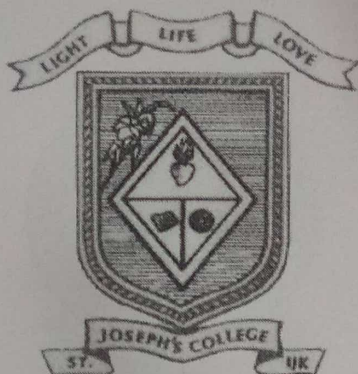
Place: Chalakudy

Date: 24-9-2017



# DEPARTMENT OF CHEMISTRY

St. Joseph's College Irinjalakuda



## CERTIFICATE

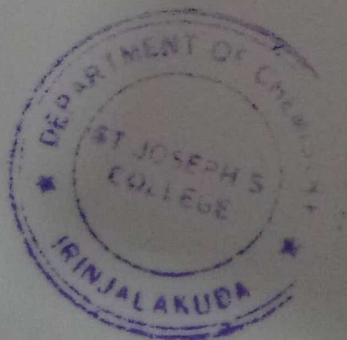
This is to certify that the project entitled " A Comparative Study on Catalysis by Neat & Zeolite encapsulated Fe(III) Schiff Base Complexes in Benzyl Alcohol oxidation" submitted by Kochurani Sebastian (Reg.No.SHAPMCH007) is a bonafide record of project work carried out by the author under my supervision, in partial fulfillment of the requirement for the degree of Master of Science in Chemistry from Calicut University.

Dr. Jessy Emmanuel  
Head of the Department  
Dept. of Chemistry  
St. Joseph's College  
Irinjalakuda

Guided By,

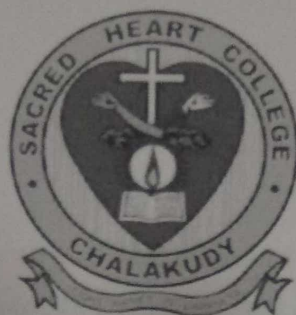
Dr. Pearly Sebastian  
Former Associate Professor  
Dept. of Chemistry  
St. Joseph's College  
Irinjalakuda.

24-09-2017



# DEPARTMENT OF CHEMISTRY

Sacred Heart College Chalakudy



## CERTIFICATE

This is to certify that the project entitled " A Comparative Study on Catalysis by Neat & Zeolite encapsulated Fe(III) Schiff Base Complexes in Benzyl Alcohol oxidation" submitted by Kochurani Sebastian (Reg.No.SHAPMCH007) 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.



Forwarded By,

Ms.Mariya Jose.

Head,Dept.of Chemistry  
Sacred Heart College,  
Chalakudy.

Chalakudy

24-09-2017





**SCIENCE CENTRE**  
SOCIETY FOR SCIENCE AND STUDENTS  
Methala, Kodungallur- 680669

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **MS.LISMA JOHNSON**, M.Sc Chemistry student of SACRED HEART COLLEGE CHALAKUDY has completed her project "**THERMOLYSIS OF HIGH DENSITY POLYETHYLENE AND POLYSTYRENE**" at Science Centre, Kodungallur from 15-4-2017 to 31-5-2017. Her performance and conduct during the period was good.

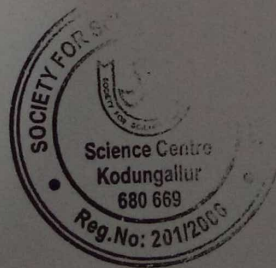
She is committed, hardworking and punctual. We wish her all success in her future endeavors.

*Sreejith V.S.*  
30/9/2017

Sreejith V.S

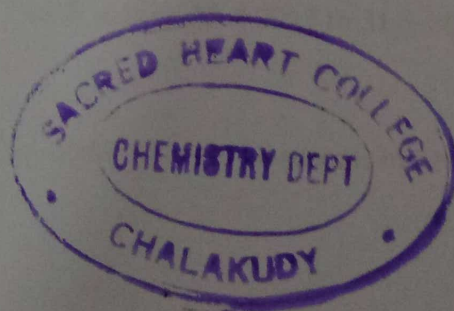
Director

Science Centre, Kodungallur



## CERTIFICATE

This is to certify that the dissertation entitled **“THERMOLYSIS OF HIGH DENSITY POLYETHYLENE AND POLYSTYRENE”** is an authentic record of the project work done by LISMA JOHNSON (REG.NO:SHAPMCH009) under the supervision and guidance of Mr.Sreejith V.S. (Director, Science Centre. Kodungallur) and in partial fulfillment of the requirements for the award of degree of Master of Science in Chemistry during the period of our study in Department of Chemistry, Sacred Heart College, Chalakudy.



A handwritten signature in blue ink, appearing to be "Alak".

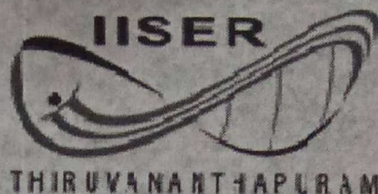
Head of the Department

Department of Chemistry

Place: Chalakudy

Date: 24-9-2017





# INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH

THIRUVANANTHAPURAM

SCHOOL OF CHEMISTRY

## CERTIFICATE

This is to certify that this project work entitled "A STUDY OF STEREOSELECTIVITY IN THE GLYCOSYLATION OF THIOLYCOSIDES, ASSISTED BY METHYLTHIO-SUBSTITUTED BENZYL NEIGHBOURING

GROUP" is an authentic record of the work carried out by Ms. SNEHA V. in School of Chemistry, Indian Institute of Science Education and Research, Thiruvananthapuram, under my supervision and guidance and no part thereof has been presented earlier for the award of any other Degree, Diploma, Fellowship or Associate ship etc.

Thiruvananthapuram  
Date: 18-6-2016

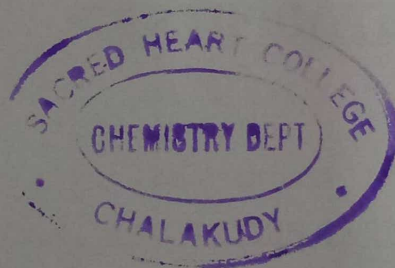
Dr. K. M. Sureshan  
Project Supervisor



## CERTIFICATE

This is to certify that the dissertation entitled "A STUDY OF STEREOSELECTIVITY IN THE GLYCOSYLATION OF THIO-GLYCOSIDES, ASSISTED BY METHYLTHIO-SUBSTITUTED BENZYL NEIGHBOURING GROUP" is an authentic record of the project work done by Sneha V(SHAPMCH011) under the supervision and guidance of Dr. K.M. Sureshan ., Associate Professor, Department of Chemistry, Indian Institute of Science Education and Research, Thiruvananthapuram and in fulfillment of requirements for the award of degree of Master of Science in Chemistry during the period of her study in Department of Chemistry, Sacred Heart College, Chalakudy.

Department of Chemistry



*Mah*  
Head of the Department

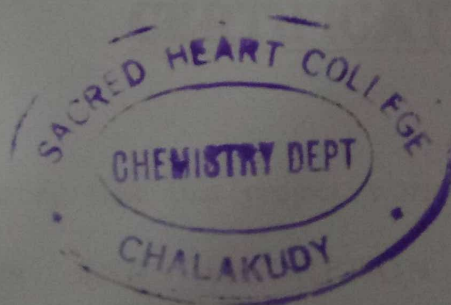
Place: Chalakudy

Date: 14/7/2017



## CERTIFICATE

This is to certify that this project titled “**GREEN SYNTHESIS, CHARACTERIZATION AND ADSORPTION PROPERTIES OF SILICA NANOPARTICLE**” is the work carried out by Shruthy P.G (SHAPMCH010) at Sacred Heart College, Chalakudy under our supervision and is herewith submitted to University of Calicut in partial fulfillment of the requirements for the award of degree of Master of Science in Chemistry during the period of her study in Department of Chemistry, Sacred Heart College, Chalakudy.



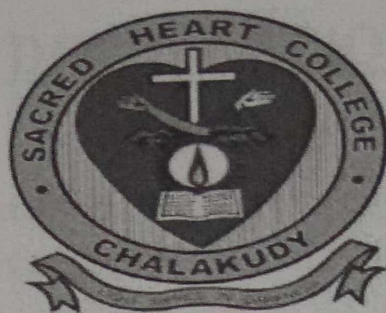
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Head of the Department

Department of Chemistry

Place: Chalakudy

Date: 15/7/2017



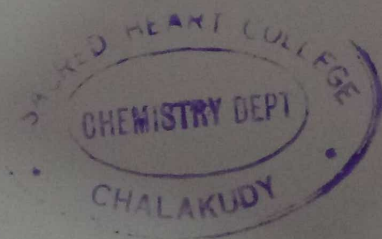
SACRED HEART COLLEGE  
AFFILIATED TO UNIVERSITY OF CALICUT  
CHALAKUDY, THRISSUR


**CERTIFICATE**

This is to certify that this project work entitled "GREEN SYNTHESIS, CHARACTERIZATION AND ADSORPTION PROPERTIES OF SILICA NANOPARTICLE" is an authentic record of the work carried out by Ms SHRUTHY P G in Sacred Heart College Chalakudy, under my super vision and guidance and no part thereof has being presented earlier for the award of any other Degree, Diploma or Fellowship etc.

Chalakudy

Date: 14/7/2019



  
Heena Peethambarn

Project supervisor