



**ST. THOMAS COLLEGE**

Ranni, Pathanamthitta, Kerala - 689673

ACCREDITED BY NAAC WITH 'B' GRADE

## **6.5.2. Quality assurance initiatives of the institution**

**Collaborative quality initiatives with other institution(s)**

**2018-2019**

**CRITERION : 6**

**GOVERNANCE, LEADERSHIP  
AND MANAGEMENT**



## 6.5.2. Summary of Functional MoU's/Linkages/Collaborations

2018-2019

No	MoU/Linkage/Collaboration	Start Date	End Date	Nature
1	Internship for Project work Dept of Chemistry, St. Thomas College Ranni & St. Dominics College Kanjirapally	02/05/2019	25/06/2019	MSc Project- Ms. Anju K.S under the supervision of Dr. Baby Thomas
2	Internship for Project work Dept of Chemistry, St. Thomas College Ranni & Marthoma College Thiruvalla	02/05/2019	26/06/2019	MSc Project- Ms. Baneesha T.P under the supervision of Dr. Ajesh Zachariah
3	Internship for Project work Dept of Chemistry, St. Thomas College Ranni & NIT, Calicut	02/05/2019	17/06/2019	MSc Project- Ms. Shipa Runder the supervision of Dr. A. Sujith
4	Internship for Project work Dept of Chemistry, St. Thomas College Ranni and Amal Jyothi College of Engineering	02/05/2019	22/06/2019	MSc Project- Ms. Sona Elizebeth Antony under the supervision of Dr. Soney. C George
5	Internship for Project work Dept of Chemistry, St. Thomas College Ranni & Thiruvalla & NIT, Calicut	02/05/2019	22/06/2019	MSc Project- Ms. Saj. Sunder the supervision of Dr. Noel Jacob Kaleekal
6	Internship for Project work Dept of Chemistry, St. Thomas College Ranni & Amal Jyothi College of Engineering	02/05/2019	22/06/2019	MSc Project- Ms. Sneha Maria Jose under the supervision of Dr. Soney C George
7	Internship for Project work Dept of Chemistry, St. Thomas College Ranni & Quality Evaluation Laboratory, Spices Board	08/04/2019	03/06/2019	MSc Project- Ms. Ganga .S under the supervision of Dr. Ramesh Babu N
8	Internship for Project work Dept of Chemistry, St. Thomas College Ranni & Quality Evaluation Laboratory, Spices Board	08/04/2019	03/06/2019	MSc Project- Ms. Nishitha M.P under the supervision of Dr. Ramesh Babu N
9	Internship for Project work Dept of Chemistry, St. Thomas College Ranni & Common Facility Service Center	25/04/2019	27/05/2019	MSc Project- Ms. Aswathy Mohan under the supervision of M.C. Harikuttan
10	Internship for Project work	25/04/2019	27/05/2019	MSc Project- Ms.



## ST. THOMAS COLLEGE, RANNI

	Dept of Chemistry, St. Thomas College Ranni & Common Facility Service Center			Neethu mol Chacko under the supervision of M.C.Harikuttan
11	<a href="#">Internship for Project work</a> Dept of Chemistry, St. Thomas College Ranni & University of Kerala Karyavattom	02/05/2019	01/07/2019	MSc Project- Ms. Sajitha.S under the supervision of Dr. Sony George
12	<a href="#">Internship for Project work of MSc Physics under Aspire Scholarship</a> Dept of Physics, St. Thomas College Ranni & Christian College Chenganoor.	29/04/2019	19/06/2019	MSc Project under Aspire scholarship Ms. Manju Mathew under the supervision of Dr. Binoy Thomas
13	<a href="#">Internship for Project work of MSc Physics under Aspire Scholarship</a> Dept of Physics, St. Thomas College Ranni & Christian College Chenganoor.	29/04/2019	19/06/2019	MSc Project under Aspire scholarship Ms. Athulya Udayakumar under the supervision of Dr. R. Jayakrishnan.
14	<a href="#">Internship for Project work of MSc Physics under Aspire Scholarship</a> Dept of Physics, St. Thomas College Ranni & Christian College Chenganoor.	29/04/2019	19/06/2019	MSc Project under Aspire scholarship Ms. Shalu Krishna under the supervision of Dr. R. Jayakrishnan.
15	<a href="#">Linkage</a> Department of Commerce and Anna Aluminium and Kitex Garments	02/03/2019	02/03/2019	Industrial Visit
16	<a href="#">Linkage</a> Department of Chemistry and Doddabetta Tea Factory, Ootty	17/01/2019	17/01/2019	Industrial Visit
17	<a href="#">Collaboration</a> Collaboration between Dept. of Physics, St. Thomas College Ranni & Kudumbasree Unit Pazhavangady.	14/03/2019	14/03/2019	Technology awareness programme for Kudumbasree members
18	<a href="#">Collaboration</a> Collaboration between Dept of Botany, St. Thomas College Ranni & Ambolil Aryavaidyasala	13/09/2018	13/09/2019	Providing plant materials for students for project work/identification of plants
19	<a href="#">Collaboration</a> Collaboration between Dept of Botany, St. Thomas College Ranni & Poonkavanam Gardens, Ranni	06/06/2018	06/06/2019	Providing plant materials for students for project work/identification of plants

**ASSESSMENT PERIOD 2017-2022**



# PROOF FOR INTERNSHIP - PROJECT WORK

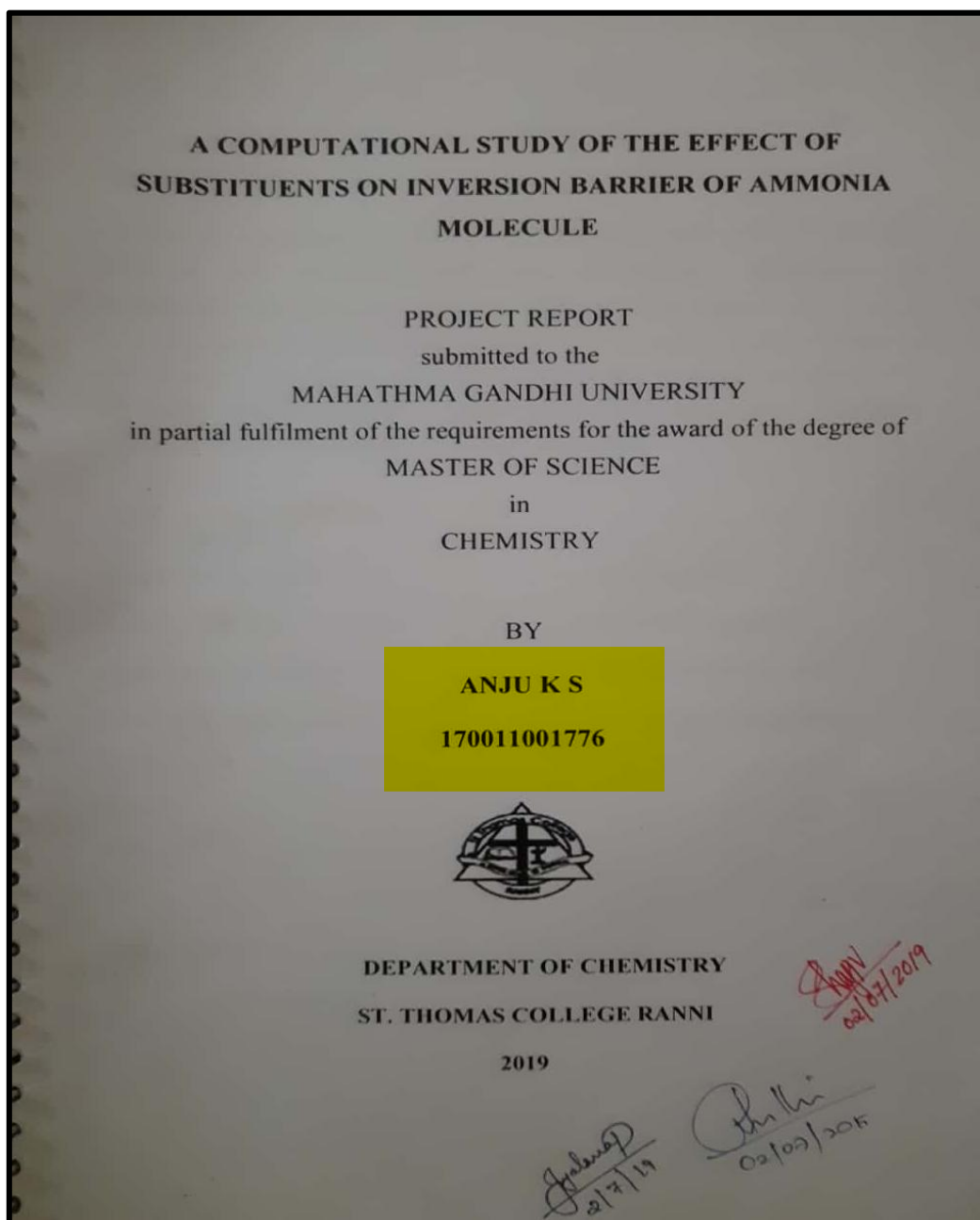
Sl.No	Name of the student
1	Anju KS
2	Baneesha T P
3	Shilpa R
4	Sona elizabeth antony
5	Saj S
6	Sneha Maria jose
7	Ganga S
8	Nishitha M.P
9	Aswathy Mohan
10	Neethumol Chacko
11	Sajitha S



**ST. THOMAS COLLEGE, RANNI**

**INTERNSHIPS - PROJECTS**

**PROJECT WORK - 1**





PROJECT WORK - 1

CERTIFICATE

I certify that this is a bonafide record of the project work entitled "A COMPUTATIONAL STUDY OF THE EFFECT OF SUBSTITUENTS ON INVERSION BARRIER OF AMMONIA MOLECULE" carried out by ANJU K S Reg No.(170011001776) in the partial fulfilment of requirements for the award of the Degree of Master of science in Pure Chemistry of Mahatma Gandhi University. This work was carried out under my supervision and guidance.

Kanjirappally

28.06.2019

  
Dr. BABY THOMAS

Associate Professor (Retd.)

St. Dominic's College

Kanjirappally



ST. THOMAS COLLEGE, RANNI

PROJECT WORK - 2

MORPHOLOGICAL AND THERMAL BEHAVIOR OF SURFACTANT  
INCOPORATED ZINC OXIDE (ZnO) NANOMATERIALS

Project report submitted to Mahatma Gandhi University, Kottayam in partial fulfillment of the  
requirement for the award of the degree of

Master of Science in Chemistry

By

BANEESHA T P

Reg.No:170011001778



DEPARTMENT OF CHEMISTRY

ST. THOMAS COLLEGE

RANNI

2017-2019

May, 2019

*[Handwritten signatures and dates]*  
2/7/19  
2/7/19  
2/7/19



PROJECT WORK - 2



RESEARCH AND POST GRADUATE DEPARTMENT OF  
CHEMISTRY

MAR THOMA COLLEGE, TIRUVALLA-689103

<http://marthomacollege.org/depts/chemistry>

e mail: [chemistry@marthomacollege.org](mailto:chemistry@marthomacollege.org)

CERTIFICATE

This is to certify that dissertation entitled "**Morphological and Thermal Behavior of Surfactant Incorporated Zinc Oxide (ZnO) Nanomaterials**" is an authentic record of the research work carried out by **Ms. Baneesha T P** (Reg.No:170011001778) under my supervision and guidance in partial fulfillment of the requirement for the degree of Master of Science in Chemistry of the St. Thomas college, Ranni and further that no part of this has been presented before for any other degree.

Dr. Ajesh K Zachariah  
Assistant Professor  
Department of Chemistry

Place: Tiruvalla

Date: 26/06/19

Post Graduate &  
Research Department of Chemistry  
Mar Thoma College  
Tiruvalla - 3  
Ph: 0469 - 2741546





ST. THOMAS COLLEGE, RANNI

PROJECT WORK - 3

SYNTHESIS AND CHARECTERIZATION OF CONDUCTIVE  
POLYMERIC COMPOSITES

*Submitted to*

Mahatma Gandhi University

In partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE  
In  
CHEMISTRY

By

SHILPA R

REG.NO: 170011001784

Under the guidance of

Dr. A. SUJITH



National Institute Of Technology Calicut



St.Thomas College, Ranni, Pathanamthitta

July 2019


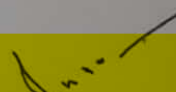

*Shilpa R*  
21/7/2019

*Dr. A. Sujith*  
02/7/19

*Dr. A. Sujith*  
02/7/19



PROJECT WORK - 3

	<b>Department of Chemistry</b>	<b>Contact Details:</b> Office: 0495-2285301 Head : 0495-2285300 Fax : 0495-2287250 Website : www.nitc.ac.in e-mail: chemistry@nitc.ac.in
	<b>National Institute of Technology Calicut</b>	
<small>एन.आई.टी. कौपरा (पी.ओ.), कालिकट, केरल - 673 601, भारत. NIT Campus (P.O.), Calicut, Kerala-673 601, India</small>		
<i>Ref. No. :</i>	<i>Date :</i>	
<b>CERTIFICATE</b>		
<p>This is to certify that the thesis entitled '<b>Synthesis and characterisation of conductive polymeric composites</b>' is a bona fide record of the project work carried out by <b>Ms. Shilpa R</b> under my supervision and guidance at Material Research Laboratory, Department of Chemistry, National Institute of Technology Calicut. This work has been carried out in partial fulfilment for the degree of Master of Science in Chemistry under Mahatma Gandhi University.</p>		
NIT Calicut 18-06-2019	 Dr. A. Sujith Associate professor	
		



ST. THOMAS COLLEGE, RANNI

PROJECT WORK - 4

**PERVAPORATION PERFORMANCE OF SILANE  
MODIFIED GRAPHENE OXIDE-SILICONE RUBBER  
NANONOCOMPOSITES**

Project report

Submitted to Mahatma Gandhi University

In partial fulfillment of the requirement for the degree of  
Master of Science in Chemistry

BY

**SONA ELIZEBATH ANTONY**

**Reg.No:170011001786**

**2017-2019**



**POST GRADUATE DEPARTMENT OF CHEMISTRY**

**ST.THOMAS COLLEGE RANNI**

Under the Guidance of

DR.SONEY C GEORGE

AMAL JYOTHY COLLEGE OF ENGINEERING

KOOVAPALLY

*[Signature]*  
24/1/19

*[Signature]*  
21/7/19



PROJECT WORK - 4



*Amal Jyothi Centre for Nanoscience and Technology  
Department of Basic Sciences  
Amal Jyothi College of Engineering  
Koovappally P.O  
Kottayam-686 518, Kerala, India  
Mobile: 91-9447870319*

E-mail: soneygeo@gmail.com, soneygeo@yahoo.co.in

22.06.2019

**Dr. Soney C George**  
Professor and Director

This is to certify that the project report titled "*Pervaporation Performance of Silane Modified Graphene Oxide-Silicone Rubber Nanocomposites*" is a bonafide record of project work carried out by Sona Elizebath Antony ( Reg no:170011001786) under my guidance, in partial fulfillment for the award of degree of Master of Science in Chemistry of Mahatma Gandhi University. The work presented in this report has not been submitted for any other degree or diploma earlier.

Soney C George  
(Supervising Teacher)



PROJECT WORK - 5

NANOFILTRATION MEMBRANE FOR ORGANIC SOLUTE  
REMOVAL

PROJECT REPORT

TO

The Mahatma Gandhi University

In the partial fulfillment of the requirements for the  
award of Degree of Master of Science in Chemistry

By

**SAJ S**

**Reg no – 170011001782**

Department of Chemistry, St. Thomas College, Ranni



Under the supervision of

**Dr.Noel Jacob Kaleekal**

Asst. Professor, Dept. of Chemical Engineering

NIT, CALICUT



PROJECT WORK - 5



NATIONAL INSTITUTE OF TECHNOLOGY, CALICUT  
DEPARTMENT OF CHEMICAL ENGINEERING

CERTIFICATE

This is to certify that the work embodied in the project entitled "NANOFILTRATION MEMBRANE ORGANIC SOLUTE REMOVAL" is an authentic record of the research work carried out by Mr. Sa... my supervision and guidance in partial fulfillment of the requirements for the degree of Master of Science in Chemistry from Mahatma Gandhi University, Kottayam and further no part of this has been used elsewhere for any other degree

PLACE: CALICUT

DATE:

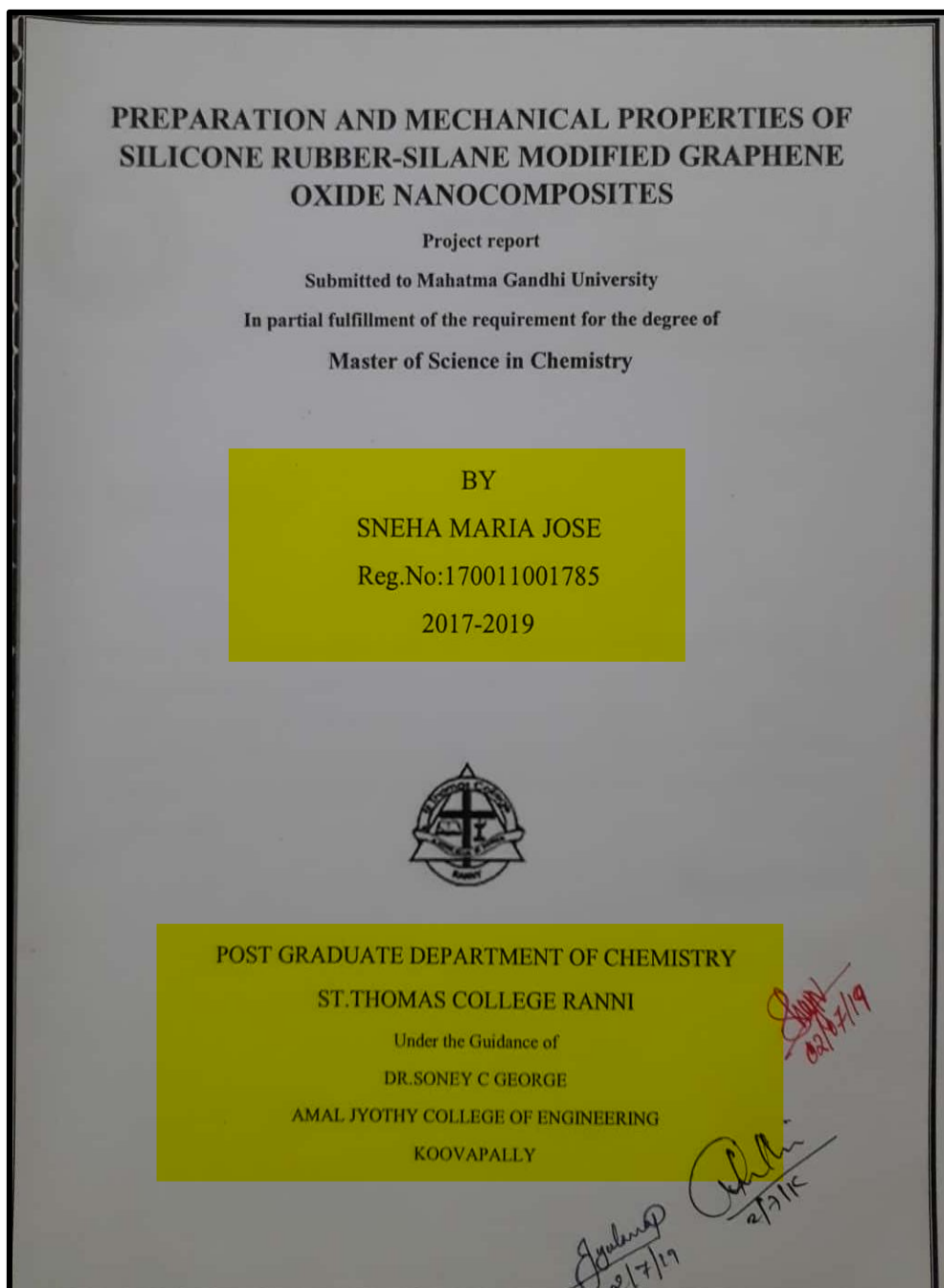
*Noel Jacob Kaleel*  
26 June  
Dr. Noel Jacob Kaleel

SUPERVISING FACULTY



ST. THOMAS COLLEGE, RANNI

PROJECT WORK - 6





PROJECT WORK - 6



*Amal Jyothi Centre for Nanoscience and Technology*  
*Department of Basic Sciences*  
*Amal Jyothi College of Engineering*  
*Koovappally P.O*  
*Kottayam-686 518, Kerala, India*  
*Mobile: 91-9447870319*

E-mail: soneygeo@gmail.com, soneygeo@yahoo.co.in

22.06.2019

**Dr. Soney C George**  
**Professor and Director**

This is to certify that the project report titled "*Preparation and Mechanical Properties of Silicone Rubber-Silane Modified Graphene Oxide Nanocomposites*" is a bonafide record of project work carried out by Sneha Maria Jose (Reg no: 170011001785) under my guidance, in partial fulfillment for the award of degree of Master of Science in Chemistry of Mahatma Gandhi University. The work presented in this report has not been submitted for any other degree or diploma earlier.

Soney C George  
(Supervising Teacher)





ST. THOMAS COLLEGE, RANNI

PROJECT WORK - 7

STUDY OF ESSENTIAL OIL CONTENT IN CUMIN AND ITS USE  
AS POTENTIAL TOOL FOR DETECTING ECONOMIC  
ADULTERATION

*Submitted to*

Mahatma Gandhi University

*In partial fulfilment of the requirement for the*

*Award of degree of*

Master of Science in Chemistry

By

GANGA S.

(Reg.No: 170011001779)

Under the guidance of

RAMESH BABU N

Scientist-C

Quality Evaluation Laboratory Spices Board, Cochin



DEPARTMENT OF CHEMISTRY

ST. THOMAS COLLEGE, RANNI

2017-2019

*[Signature]*  
22/07/19

*[Signature]*  
21/07/2019



ST. THOMAS COLLEGE, RANNI

## PROJECT WORK - 7

<p>गुणवत्ता मूल्यांकन प्रयोगशाला स्पाइसेस बोर्ड (वाणिज्य एवं उद्योग मंत्रालय, भारत सरकार) सुगंध भवन, एन.एच. बypass पो.बी.नं. 2277, पालारिवट्टम पी.ओ. कोचिन-682 025 भारत</p>		<p><b>QUALITY EVALUATION LABORATORY SPICES BOARD</b> (Ministry of Commerce and Industry, Govt. of India) Sugandha Bhavan, N.H. By-pass P.B. No. 2277, Palarivattom P.O. COCHIN - 682 025, INDIA</p>
<p>QEL/M.Sc Projects/2014</p>		<p>04.06.2019</p>
<p><b>CERTIFICATE</b></p>		
<p>This is to certify that the project titled "STUDY OF ESSENTIAL OIL COMPONENT IN CUMIN, AND ITS USE AS POTENTIAL TOOL FOR DETECTING ECONOMIC ADULTRATION" submitted to Mahatma Gandhi University in partial fulfillment of the requirements for the award of <b>MASTER OF SCIENCE</b> in <b>CHEMISTRY</b> is record of original work done by Ms. <b>GANGA .S</b>, in the Quality Evaluation Laboratory of Spices Board, Cochin-25, during the period 8<sup>th</sup> April 2019 to 3<sup>rd</sup> June 2019.</p>		
		<p><i>K.R.K. Menon</i> <b>K.R.K.MENON</b> SCIENTIST-D &amp; HEAD</p>
 ISO 9001:2008 FS 37812	 ISO 14001 : 2004 EMS 52774	 ISO/IEC 17025 T-0729 - Chemical Testing T-0730 - Biological Testing
		<p>Phone : 0484-2333610 to 13/16, 2340180 Fax : 0484-2331213 Email: <a href="mailto:spicesboard@vsnl.com">spicesboard@vsnl.com</a> <a href="mailto:sbqelkochi@gmail.com">sbqelkochi@gmail.com</a> Website : <a href="http://www.indianspices.com">www.indianspices.com</a></p>



ST. THOMAS COLLEGE, RANNI

PROJECT WORK - 8

**EFFECT OF SPICES MATRIXS IN LCMS/MS ANALYSIS OF  
ORGANO PHOSPHOROUS RESIDUES**

*Submitted to*

**Mahatma Gandhi University**

*In partial fulfilment of the requirement for the*

*Award of degree of*

**Master of Science in Chemistry**

*By*

**NISHITHA M. P**

Reg.No: 170011001781

*Under the guidance of*

**RAMESH BABU N**

**Scientist-C**

**Quality Evaluation Laboratory Spices Board, Cochin**



**DEPARTMENT OF CHEMISTRY**

**ST.THOMAS COLLEGE, RANNI**

2017-2019






*[Signature]*  
02/07/19

*[Signature]*  
02/07/19  
*[Signature]*  
2/7/19



ST. THOMAS COLLEGE, RANNI

PROJECT WORK - 8

<p>गुणवत्ता मूल्यांकन प्रयोगशाला स्पाइसेस बोर्ड (सुगन्ध एवं उद्योग मंत्रालय, भारत सरकार) सुगन्ध भवन, एन.एच. बापास पी.बी.नं. 2277, पालारिवट्टम पी.ओ. कोचिन-682 025 भारत</p>	 स्पाइसेस बोर्ड भारत	<p><b>QUALITY EVALUATION LABORATORY SPICES BOARD</b> (Ministry of Commerce and Industry, Govt. of India) Sugandha Bhavan, N.H. By-pass P.B. No. 2277, Palarivattom P.O. COCHIN - 682 025, INDIA</p>
<p>QEL/M.Sc Projects/2014</p>		<p>03.06.2019</p>
<p><u>CERTIFICATE</u></p>		
<p>This is to certify that the project titled "EFFECT OF SPICE MATRICES IN LCMS/MS ANALYSIS OF ORGANOPHOSPHORUS RESIDUES" submitted to Mahatma Gandhi University in partial fulfillment of the requirements for the award of MASTER OF SCIENCE in CHEMISTRY is record of original work done by Ms. NISHITHA.M.P, in the Quality Evaluation Laboratory of Spices Board, Cochin-25, during the period 8<sup>th</sup> April 2019 to 3<sup>rd</sup> June 2019.</p>		
		<p><i>K.R.K. Menon</i> K.R.K. MENON (SCIENTIST-D &amp; HEAD)</p>
 ISO 9001:2008 FS 37812	 ISO 14001 : 2004 EMS 52774	 ISO/IEC 17025 T-0729 - Chemical Testing T-0730 - Biological Testing
		<p>Phone : 0484-2333610 to 13/16, 2340180 Fax : 0484-2331213 E mail: spicesboard@vsnl.com sbqelkochi@gmail.com Website : www.indianspices.com</p>



ST. THOMAS COLLEGE, RANNI

PROJECT WORK - 9

**EFFECT OF CALCIUM CARBONATE ON  
RHEOMETRICAL AND MECHANICAL PROPERTIES  
OF NR-PB**

*A Dissertation Submitted to the Mahatma Gandhi University in Partial Fulfilment of the  
Requirement for the Award of the*

**DEGREE OF MASTER SCIENCE IN CHEMISTRY**

By

**ASWATHY MOHAN**

(Reg.No - 170011001777)

*Under the supervision of*

**Mr. M. C Harikuttan**

**(Common Facility Service Centre, Department of Industries and Commerce)**



**DEPARTMENT OF CHEMISTRY**

**ST. THOMAS COLLEGE**

**RANNY**

**2017-2019**

1

*Prithi*  
02/09/2019



*Prithi*  
02/07/19

*Prithi*  
2/7/19



ST. THOMAS COLLEGE, RANNI

PROJECT WORK - 9

 **Common Facility Service Centre**  
Department of Industries & Commerce  
(ISO 9001:2008 Certified) 

No. B./392/2019 Dtd: 27/05/2019


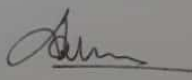
*This is to certify that*

**Ms. ASWATHY MOHAN**  
(II<sup>ND</sup> Year M.Sc. Chemistry)

of **ST. THOMAS COLLEGE, RANNI**  
has successfully completed various studies under the main  
guidance of Dr ANSU JACOB, along with technical supervision  
of Common Facility Service Centre, Changanacherry as part of  
her

**Project Work on**  
**"EFFECT OF CALCIUM CARBONATE ON RHEOMETRICAL  
AND MECHANICAL PROPERTIES OF NR-PB"**

During the period from 25/04/2019 to 27/05/2019

   
**DEPUTY DIRECTOR**

Industrial Nagar P.O., Changanacherry, Kottayam- 686 106  
Phone/ Fax: 0481 2720311, E-mail: cfscchry@gmail.com, cfsc@cfsc.org.in, web: www.cfsc.org.in



ST. THOMAS COLLEGE, RANNI

PROJECT WORK - 10

PHYSICAL PROPERTIES OF NATURAL RUBBER (NR) AND  
ACRYLONITRILE BUTADIENE RUBBER NBR BLEND

*Project report submitted to MG University in partial*

*fulfillment of requirement for the award of the*

DEGREE OF MASTER OF SCIENCE IN CHEMISTRY

*By*

NEETHUMOL CHACKO

Reg No: 170011001780

*Under the supervision of*

Mr. M. C Harikuttan

(Common Facility Service Centre, Department of Industries and Commerce)



DEPARTMENT OF CHEMISTRY

ST. THOMAS COLLEGE

RANNY

2017-2019

*Shaji*  
02/07/19

*Johny*  
2/7/19

*Shaji*  
2/7/19





ST. THOMAS COLLEGE, RANNI

PROJECT WORK - 10

 **Common Facility Service Centre**  
Department of Industries & Commerce  
(ISO 9001:2008 Certified) 

No. B./392/2019 Dtd: 27/05/2019

**This is to certify that**

**Ms. NEETHUMOL CHACKO**  
(II<sup>ND</sup> Year M.Sc. Chemistry)

**of ST. THOMAS COLLEGE, RANNI**

has successfully completed various studies under the main guidance of Dr ANSU JACOB, along with technical supervision of Common Facility Service Centre, Changanacherry as part of her

**Project Work on**

**"PHYSICAL PROPERTIES OF NATURAL RUBBER (NR) & ACRYLONITRILE BUTADIENE RUBBER (NBR BLEND)"**

During the period from 25/04/2019 to 27/05/2019

   
**DEPUTY DIRECTOR**

Industrial Nagar P.O., Changanacherry, Kottayam- 686 106  
Phone/ Fax: 0481 2720311, E-mail: cfscchry@gmail.com, cfsc@cfsc.org.in, web: www.cfsc.org.in





ST. THOMAS COLLEGE, RANNI

PROJECT WORK - 11

**$\beta$ -Cyclodextrin Functionalized Phosphorus and Nitrogen-Doped Carbon Dot as a Fluorescent Probe for Doxorubicin Drug Delivery**

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

**Master of Science in Chemistry**

*BY*

**SAJITHA S**

**(Reg.No:170011001783)**

Under the Guidance of

Dr. Sony George

Assistant Professor

Department of Chemistry

University of Kerala, Kariavattom



ST. Thomas College, Ranni

2017-2019

*Sony George*  
22/07/19

*Sajitha S*  
21/7/19

*Sajitha S*



ST. THOMAS COLLEGE, RANNI

PROJECT WORK - 11

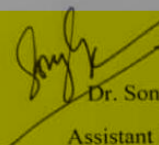


UNIVERSITY OF KERALA  
DEPARTMENT OF CHEMISTRY

CERTIFICATE

This is to certify that the dissertation entitled ' **$\beta$ -Cyclodextrin Functionalized Phosphorus and Nitrogen-Doped Carbon Dot as a Fluorescent Probe for Doxorubicin Drug Delivery**' is an authentic record of the research work carried out by **Ms. Sajitha S** (Reg.No:170011001783) under my supervision and guidance in partial fulfillment of the requirement for the degree of Master of Science in Chemistry of the ST. Thomas College, Ranni and further that no part of this has been presented before for any other degree.

Dr. SONY GEORGE  
Department of Chemistry  
University of Kerala  
Kariavattom Campus  
Thiruvananthapuram - 695 581

  
Dr. Sony George  
Assistant Professor  
(Head of the Department)  
Department of Chemistry  
University of Kerala, Kariavattom

Place: Kariavattom

Date:



ST. THOMAS COLLEGE, RANNI

INTERNSHIP - PROJECT WORK



**St. Thomas College, Ranni**

PAZHAVANGADI P.O., KERALA, INDIA - 689 673

RE - ACCREDITED BY NAAC AT B LEVEL

(Affiliated to Mahatma Gandhi University, Kottayam - Kerala)

Prof. Dr. LATA MARINA VARGHESE  
PRINCIPAL

Date : .....

23/10/2018

To whom so ever it may concern

This is to certify that MANJU MATHEW is a bonafide II M.Sc Physics student of this college.

We have no objection to her applying for Aspire scholarship for doing her project in Christian College, Chengannur.

PRINCIPAL

Prof.Dr.Lata Marina Varghese  
Principal  
St.Thomas College, Ranni



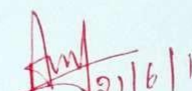
Ph : 04735 - 226238, 226738 (O)  
Email: stcranni@gmail.com, www.stcranni.ac.in



INTERNSHIP - PROJECT WORK - ASPIRE SCHOLARSHIP

CERTIFICATE

This is to certify that this dissertation "*WHITE LIGHT EMISSION FROM NATURAL EXTRACTS*" submitted for the award of the degree of Master of Science in Physics is an authentic record of research done by *MANJU MATHEW* (Reg No. 170011003528) under *Aspire Scholarship* under the supervision and guidance of *Dr. VINOY THOMAS*, ASSISTANT PROFESSOR, Research & Post Graduate Department of Physics, Christian College Chengannur.

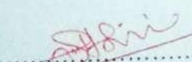
  
Head of the Department  
Prof. ANJU JOSEPH  
ASSISTANT PROFESSOR  
Post Graduate Department of Physics  
St. Thomas College, Ranni



Register No : 170011003528

Year of Study : 2017 – 2019

Examiners:

1. 

2. ....

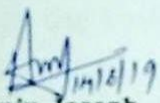


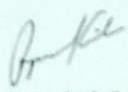
INTERNSHIP - PROJECT WORK - ASPIRE SCHOLARSHIP

CERTIFICATE

This is to certify that the dissertation entitled "**Photocatalytic Activity of Green Synthesized Silver Nanoparticles**" was carried by **Ms. Athulya Udayakumar (170011003525)** at **Photovoltaic Research Centre Christian College, Chengannur** under the guidance of **Dr. R. Jayakrishnan, Post-graduate & Research Department of Physics, Christian College, Chengannur** and **Smt. Anju Joseph, Department of Physics, St. Thomas College, Ranni** in partial fulfillment for the degree of masters in science during the year 2017-2019 of **Mahatma Gandhi University, Kottayam.**

Project Guides

  
**Smt. Anju Joseph**  
(Internal Guide)  
Department of Physics  
St. Thomas College, Ranni

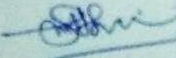

  
**Dr. R. Jayakrishnan**  
(External Guide)  
Research Guide  
Department of Physics,  
Christian College Chengannur

**Dr. R. JAYAKRISHNAN**  
Asst. Professor, Dept. of Physics  
Christian College  
Chengannur - 689122  
Kerala, India

Place: Ranni

Date:

External Examiner

1. 
2. 





INTERNSHIP - PROJECT WORK - ASPIRE SCHOLARSHIP

CERTIFICATE

This is to certify that the dissertation entitled "**Photocatalytic Activity of Green Synthesized Silver Nanoparticles**" was carried by **Ms. Shalu Krishna (170011003533)** at **Photovoltaic Research Centre Christian College, Chengannur** under the guidance of **Dr. R. Jayakrishnan, Post-graduate & Research Department of Physics, Christian College, Chengannur** and **Smt. Anju Joseph, Department of Physics, St. Thomas College, Ranni** in partial fulfillment for the degree of masters in science during the year 2017-2019 of **Mahatma Gandhi University, Kottayam.**

Project Guides

Smt. Anju Joseph

(Internal Guide)

Department of Physics

St. Thomas College, Ranni

Dr. R. Jayakrishnan

(External Guide)

Research Guide

Department of Physics,

Christian College Chengannur

Place: Ranni

Date:

External Examiner

1.

2.

Dr. R. JAYAKRISHNAN  
Asst. Professor, Dept. of Physics  
Christian College  
Chengannur - 689122  
Kerala, India



**ST. THOMAS COLLEGE, RANNI**

# **PROOF FOR COLLABORATION**

## **INDUSTRY VISIT**



ST. THOMAS COLLEGE, RANNI

**St. Thomas College, Ranni**  
PAZHAVANGADI P.O., KERALA, INDIA - 689 673  
RE - ACCREDITED BY NAAC AT B LEVEL  
(Affiliated to Mahatma Gandhi University, Kottayam - Kerala)

M. Dr. LATA MARINA VARGHESE  
PRINCIPAL

Date : \_\_\_\_\_  
01/03/2019


To  
The Manager  
Anna Aluminum and Kitex,  
Kizhakkambalam.


Sir/Madam,

Sub: Requesting permission to visit your company.

As a part of Industrial Visit conducted by Entrepreneurship Development Club of our college, 48 students and 3 faculties are visiting your industry on 02/03/2019. Kindly grant them the permission to visit your industry.

List of Faculties accompanying:  
Jikku James (club coordinator)  
Lejo Kuriakose Joy  
Anjali Jacob

Thank You  
Yours Sincerely  
  
Prof. Dr. Lata Marina Varghese  
Principal  
St. Thomas College, Ranni



Ph : 04735 - 226238, 226738 (O)  
Email: stcranni@gmail.com, www.stcranni.ac.in





INDUSTRIAL VISIT  
ST. THOMAS COLLEGE, RANNI  
REPORT

On 2nd March 2019, the students of commerce department, St Thomas College had an industrial visit to Anna Aluminium Company, Pvt Ltd and kute garments located at Kuzhakkambalam, Ernakulam under the guidance of our head of the Department, Mr Renji Sir, Mr Jilethu Sir and Angeli miss.

By 6.00 am, we have departed from the college. From the total strength (48) of the class, 47 students had participated in this program. At about 8.30 am, we reached at Pala and had our breakfast. And then continued our journey.

By 10.30, we reached, Anna Aluminium industry at Kuzhakkambalam. Over there we saw different kinds and shapes of aluminium utensils made there. The employees there helped us in getting more information about the working of the machines present there. Altogether, it was a great time in getting an overall knowledge about the industry and about their manufacturing sector. Moreover, it was even possible to understand the posts of the employees worked in.



us about working of the company. The company began in 1968, the founder SLP M.C. Jacob. There were complete range of aluminium products to suit all household and commercial needs. They have found market ground in India as well as abroad like the Gulf, Africa, Australia and U.S.A.

- By 11:10am we left Anna aluminium and then headed to Kite. By 11:45am we reached there.

At the entrance we met a guide who guided into the manufacturing unit. There were many products like bags and garments ... etc... The company employs over 7000 people. It's the 2nd largest producer of children's apparel in the world.

- By 12:30pm we left Kite and headed to Lulu mall, Kochi. We reached there by around 1:35pm

- Had lunch and had shopping from Lulu and some explored the journey in Kochi Metro, which was really a good experience. By 4:45pm we left Lulu and headed towards Panni.

- we also celebrated one of our friend's birthday on the way.

- By 7:30pm we had dinner from a restaurant in Thalayolaparamb

- By 11:00pm we reached college.



By 11.15 am, we left Anna Aluminium Company and then went to Kiloz garments that was 4 km apart from the earlier visited industry. Then the person appointed in that particular company welcomed us and shows all the activities taking place in that industry. The main area of production here is school bags. At here, we saw that more than 100 employees are performing their work on that hall at the same time. Each of them are doing the specific work assigned to them. As a part of their gratitude, they treated us by giving sweets. At the end, some of my colleagues had utilised their time to buy some products from this company, and by 12.15 pm, we left from there.

We have completed the visits of two industries by 12.15 pm and later we moved on to Kal Kulumall at Edapally. And we had our lunch at Edapally. After that, we have visited several places in Ernakulam, like Marine Drive, Fort Kochi, etc. Some have travelled in Kochi Metro and others take their time for shopping.

By 5.00 pm, we had departed from Ernakulam and about 8.00 pm we had our lunch from Thalayolaparamb. We had also celebrated the birthday of our colleague by cutting the cake. After all we had reached at the college by 10.30 pm.

It was a wonderful trip planned by our department. This industrial visit helped us in







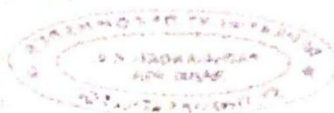
**POST GRADUATE DEPARTMENT OF COMMERCE**

**ST THOMAS COLLEGE RANNI**

**INDUSTRIAL VISIT 2018-2019**

**LIST OF STUDENTS**

- 1 PUNNOOSE REJI
- 2 MOHAMMED AZHAR IRSHAD
- 3 MEKKU THOMAS JACOB
- 4 AROMAL S
- 5 JOSLIN ANNA JOSE
- 6 SREENATH SAJI
- 7 RESHMA K. R
- 8 JOBAL ABRAHAM
- 9 SOUMYA MOL
- 10 REJIL REJI KURIAN
- 11 LIJOMON SAMUEL
- 12 FEBA MARY THOMAS
- 13 NIMMI PUNNOOSE
- 14 RADHIKA C S
- 15 ALAN V ACHENKUNJU
- 16 BINIT ABRAHAM
- 17 ANSILY MARTIN
- 18 LINU MANIYAN
- 19 JYOTHIS THOMAS
- 20 GEEMON VARGHESE GEORGE
- 21 ARUNIMA R
- 22 SANU JACOB KURUVILLA
- 23 ARYA VIJAYAN
- 24 ASWATHY SHYLAJAN
- 25 CHIPPY P.S
- 26 SANGEETHA SANTHOSH
- 27 V.CHAITHRA MADHU
- 28 AMRITHA RAJEEVAN
- 29 JEFFIN SAJI
- 30 S SARANYA
- 31 JUSTIN P JACOB
- 32 DIVYA R CHANDRAN
- 33 AJITH BABU
- 34 ROSHNA RASHEED
- 35 BINNY SUSAN THOMAS
- 36 ANUSHA MADHU
- 37 BINIT ABRAHAM





**ST. THOMAS COLLEGE, RANNI**

## **PROOF FOR LINKAGE / INDUSTRIAL VISIT**



INDUSTRIAL VISIT - REPORT AND LIST OF STUDENTS

St.Thomas College Ranni  
PG Department of Chemistry  
Industry Visit 2018-19

The 22 students along with teaching faculty Mrs.Rintu Mathew and Miss.Swetha C visited Doddabetta Tea Factory,Udhagamanadalam On 17/01/2019. Students were benefited much by this visit.It helped the students to be familiarized by various processing techniques and Machineries .Industrial visit provide the students with an opportunity to learn practically through interaction, working methods and employment practices. By way of interactions with the staff of the industry, students got more exposure towards the current work conditions of the industry.

Sl.no	Name of the student
1.	Tincy M B
2.	Akhila Susan Thomas
3.	Arsha S
4.	Shebina Shamon
5.	Aiswarys S
6.	Jinto Tom
7.	Nufeena N
8.	Shalumol N Suresh
9.	Athira Chandran
10.	Anjana Thomas
11.	Rajalekshmi R Nair
12.	Jinta Sara Joseph
13.	Anju A S
14.	Harsha P R
15.	Ashlin TAsok
16.	Jawad ismail
17.	Tincy M B
18.	Akhila Susan Thomas
19.	Arsha S
20.	Shebina Shamon
21.	Aiswarys S
22.	Nufeena N



Dr. Ansu Jacob  
Head of the Department  
Department of Chemistry  
St. Thomas College  
Ranny - 689 673





VISIT TO TEA FACTORY - CERTIFICATE

**Doddabetta Tea Factory  
And the Tea Museum**



**INDUSTRIAL VISIT CERTIFICATE**

This is to certify that students of *St Thomas College, Ranni, Kerala*  
*Dept. of Chemistry*  
visited The Doddabetta Tea Factory and the Tea Museum on *17/1/2019*

They were given first hand information of the entire tea history and processing. They participated in a guided factory tour in which the history of tea and the different stages of tea processing like withering, crushing, cutting / tearing / curling (CTC), shaping, fermentation, drying, cleaning and grading was explained to them. The students evinced keen interest in knowing all aspects about tea manufacture.

Place : Udhagamandalam  
Date : *17/1/2019*



*N. S. S.*  
Authorised Signatory

Adm. Office : 16-B, Nankem Hospital Premises, Coonoor - 643 101, The Nilgiris. Phone : (0423) 2231679  
Mobile : 94430 30520 / 94434 18000 www.teamuseum-india.com e-mail : tmuseumdtf@rediffmail.com





## **Proof of Agreement of Collaboration**

**BETWEEN**

**DEPARTMENT OF PHYSICS, ST.THOMAS  
COLLEGE, RANNI**

**AND**

**KUDUMBASREE UNIT, PAZHAVANGADI,  
RANNI**



ST. THOMAS COLLEGE, RANNI

AGREEMENT LETTER



**St. Thomas College, Ranni**

**PAZHAVANGADI P.O., RANNI, KERALA, INDIA - 689 673**

Re-Accredited at B Level by NAAC

(Affiliated to Mahatma Gandhi University, Kottayam, Kerala)

e-mail:- stcranni@gmail.com, www.stc.ranni.ac.in

Ph : 8301057965

Date: .....

Dear Madam,

Thank you for the kind courtesy extended to us during our visit to your office.

With reference to the discussions we had, it is with great pleasure that we, the Department of Physics at St. Thomas College Ranni, announce our collaboration with Kudumbashree Unit Pazhavangadi Panchayath, Ranni. As part of our collaboration, the students of our department will be providing technology awareness sessions for the members of Kudumbashree.

With this collaboration, our aim is to empower the members of Kudumbashree with the knowledge and skills required to effectively use technology in their daily lives. The technology awareness sessions will be conducted by our students, who will cover a wide range of topics such as basic computer skills, internet usage, social media, and online safety.

The collaboration between our department and Kudumbashree is a great initiative that will not only benefit the members of Kudumbashree but also our students. This partnership will provide our students with an opportunity to apply their academic knowledge in a real-world setting, develop their communication and interpersonal skills, and gain valuable experience working with a community organization.

We are excited to kick-start this collaboration and look forward to a fruitful partnership between our department and Kudumbashree Unit Pazhavangadi Panchayath, Ranni. Together, we hope to empower and uplift the community through education and technology.

Yours sincerely,

The Head of the Department

Department of Physics

St. Thomas College, Ranni





## **Proof of Activity under Collaboration**

Department of Physics, St.Thomas College, Ranni

AND

Kudumbasree Unit, Pazhavangadi

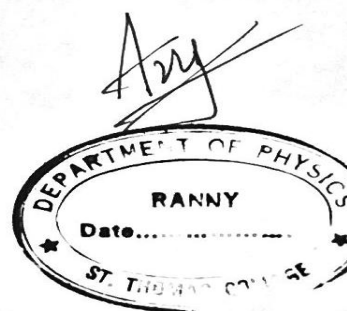


## REPORT

- Collaborating institutions: Department of Physics, St. Thomas College, Ranni and Kudumbashree Unit Pazhavangadi Panchayath Ranni
- Title of the programme: Technology Awareness Programme for Kudumbashree Members
- Name of the faculty Coordinators: Asst Prof Sreevalsa K & Miss Jeffi Jose
- Date: 14/03/2019
- Number of volunteer student participants from St. Thomas College, Ranni :8
- Number of Kudumbasree Workers attended from, Pazhavangadi, Ranni: 62
- Objective of the Program: To empower Kudumbashree members to leverage the benefits of technology to achieve their personal and professional goals and contribute to the socio-economic development of their communities.

- **Description of the Event**

The students of UG conducted a Technology Awareness Programme for Kudumbasree Workers on 14th March 2019. The students gave training for using different mobile application useful to them. And also they helped them to create email address and the basic instructions to handle them. The faculty members Sreevalsa K and Jeffy Jose accompanied the students. The session are very fruitful to them. Smt. Nisha CDS, Kudumbasree, Pazhavangadi Gramma Panchayath delivered the vote of thanks.







**PHOTOGRAPHS OF ACTIVITY**

**Collaboration between Department of Physics and Kudumbasree, Pazhavangady**




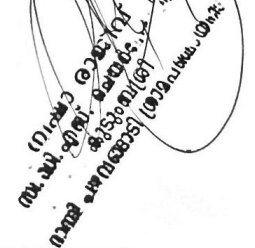




# ST. THOMAS COLLEGE, RANNI

## Activity under the Collaboration between St.Thomas College, Ranni and Kudumbasree Unit

### Activities done under the collaboration between St. Thomas College, Ranni and Kudumbashree Unit Pazhavangadi, Ranni in the academic year :2018-2019

Date	Title of Activity	Name of the Department which initiated the activity	Name of the coordinators	No. of students participated in the activity	Signature of Heads of the Partnering Institutions	
					St. Thomas College, Ranni	Kudumbashree Unit Pazhavangadi, Ranni
14/03/2019	Technology Awareness Programme for Kudumbashree Members	Department of Physics, St. Thomas College, Ranni	Asst Prof Sreevalsa K & Miss Jeffy Jose	8	 	 



കുടുംബശ്രീ കമ്മ്യൂണിറ്റി ഡവലപ്മെന്റ് സൊസൈറ്റി

Reg. No: P:303-02

പഴുവങ്ങാടി ഗ്രാമപഞ്ചായത്ത്

നമ്പർ: CDS

തീയതി : .....

This is to certify that the students from B.Sc. Physics, St. Thomas college, Ranni, have successfully conducted a class on Technology Awareness for the Kudumbashree members of Pazhavangadi Panchayath on 14-03-2019.

The class aimed to create awareness about the latest technology trends and its applications. The Kudumbashree members actively participated in the interactive session & appreciated the efforts taken by the students in sharing their knowledge & experience.

We congratulate the students for their valuable contribution to the community & wish them very best for their future endeavours.

Certified by

Date: 14-03-2019.

Venue: Ranni

സി.ജോ.രാജീവ്  
നമ്പർ.എസ്. മലയാളം  
കുടുംബശ്രീ  
നാമം പഴുവങ്ങാടി ഗ്രാമപഞ്ചായത്ത്





## ST. THOMAS COLLEGE, RANNI

Collaboration between Ambolil Aryavaidyasala and Department of Botany,  
St. Thomas College, Ranni



### St. Thomas College, Ranni

PAZHAVANGADI P.O., RANNI, KERALA, INDIA - 689 673

Re-Accredited at B Level by NAAC

(Affiliated to Mahatma Gandhi University, Kottayam, Kerala)

e-mail:- stcranni@gmail.com, www.stc.ranni.ac.in

Ph : 8301057965

Date: .....  
13.09.2018

#### Collaborative Agreement

Department of Botany, St. Thomas College, Ranni appreciates the opportunity to collaborate with Ambolil Aryavaidyasala, Puthuval Pathanapuram, Pathanamthitta-689695 (An ISO 9001:2015), in consideration of the mutual promises made herein and of good and valuable consideration, the receipt and sufficiency of which both St. Thomas College, Ranni, and Ambolil Aryavaidyasala shall encourage interaction between faculty members and students. Ambolil Aryavaidyasala will provide plant materials for the students of botany for their project work and the college will provide technical guidance in the form of proper identification of plants for the collaborating partner.

The duration of the agreement shall be for a period of 1 year from the effective date. During this tenancy, the agreement may be extended or terminated by prior notice of not less than one month by either party. There are no binding commitments placed on either party by virtue of this collaboration.

We look forward to this collaboration.

  
Dr. Devi Priya M.

Department of Botany

St. Thomas College, Ranni

  
Dr. Gommen Mathew BAMS  
Proprietor





# ST. THOMAS COLLEGE, RANNI

Collaboration between Ambolil Aryavaidiasala and Department of Botany,  
St. Thomas College, Ranni



GST IN:32AGSPM5610J1Z9

Ph: 04734 299958  
9497489284

## AMBOLIL ARYAVAIDYASALA

PUTHUVAL, PATHANAPURAM P.O - 689 695  
Manufacturing L.No: 30/25D/96

Ref:

Date: ..... 13.09.2018

### Collaborative Agreement

Ambolil Aryavaidiasala, Puthuval, Pathanapuram, Pathanamthitta-689695 (An ISO 9001:2015) appreciates the opportunity to collaborate with Department of Botany, St. Thomas College, Ranni in consideration of the mutual promises made herein and of good and valuable consideration, the receipt and sufficiency of which Ambolil Aryavaidiasala and St. Thomas College, Ranni shall encourage interaction between faculty members and students. Ambolil Aryavaidiasala will provide plant materials for the students of botany for their project work and the college will provide technical guidance in the form of proper identification of plants for the collaborating partner.

The duration of the agreement shall be for a period of 1 year from the effective date. During this tenancy, the agreement may be extended or terminated by prior notice of not less than one month by either party. There are no binding commitments placed on either party by virtue of this collaboration.

We look forward to this collaboration.

Y Dr. Oommen Mathew BAMS  
Proprietor

Dr. Devi Priya M.

Department of Botany

St. Thomas College, Ranni





ST. THOMAS COLLEGE, RANNI

Collaboration between Pookkavanam Gardens and Department of Botany,  
St. Thomas College, Ranni



**St. Thomas College, Ranni**

**PAZHAVANGADI P.O., RANNI, KERALA, INDIA - 689 673**

**Re-Accredited at B Level by NAAC**

**(Affiliated to Mahatma Gandhi University, Kottayam, Kerala)**

**e-mail:- stcranni@gmail.com, www.stc.ranni.ac.in**

**Ph : 8301057965**

**Date: 06.06.2018**

### Collaborative Agreement

Department of Botany, St. Thomas College, Ranni appreciates the opportunity to collaborate with Poonkavanam Gardens, College Road, Pazhavangadi PO, Ranni, in consideration of the mutual promises made herein and of good and valuable consideration, the receipt and sufficiency of which both St. Thomas College, Ranni, and Poonkavanam Gardens shall encourage interaction between faculty members and students. Poonkavanam Gardens will provide plant materials for the students of botany for practical and project work and the college will provide technical guidance for nursery management for the collaborating partner.

The duration of the agreement shall be for a period of 1 year from the effective date. During this tenancy, the agreement may be extended or terminated by prior notice of not less than one month by either party. There are no binding commitments placed on either party by virtue of this collaboration.

We look forward to this collaboration.

  
Devi Priya M.

Department of Botany  
St. Thomas College, Ranni

  
Suresh Nicholas  
Proprietor  






Collaboration between Poonkavanam Gardens and Department of Botany,  
St. Thomas College, Ranni

**POONKAVANAM GARDENS**

**COLLEGE ROAD, PAZHAVANGADI PO, RANNY**

e-mail:surshmanchini@gmail.com

Ph: 9400119940


06.06.2018

**Collaborative Agreement**


Poonkavanam Gardens, College Road, Pazhavangadi PO, Ranny appreciates the opportunity to collaborate with, Department of Botany, St. Thomas College, Ranny in consideration of the mutual promises made herein and of good and valuable consideration, the receipt and sufficiency of which both Poonkavanam Gardens and St. Thomas College, Ranny shall encourage interaction between faculty members and students. The college will provide technical guidance for nursery management for the collaborating partner and the Poonkavanam Gardens will provide plant materials for the students of botany for practical and project work.

The duration of the agreement shall be for a period of 1 year from the effective date. During this tenancy, the agreement may be extended or terminated by prior notice of not less than one month by either party. There are no binding commitments placed on either party by virtue of this collaboration.

We look forward to this collaboration.

  
Mr. Suresh Nicholas Manchini  
Proprietor



  
Dr. Devi Priya M.  
Department of Botany  
St. Thomas College, Ranni







Proof for activity under the collaboration between Dept.of Botany  
and Ambolil Aryavaidyasala

# Department of Botany

## St. Thomas College

Pazhavangadi P.O., Ranni, Pathanamthitta- 689673

E-mail – [botanydeptstcranni@gmail.com](mailto:botanydeptstcranni@gmail.com)

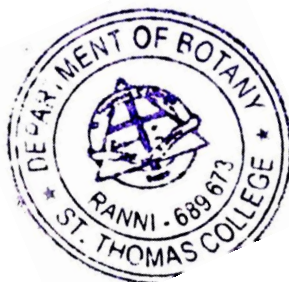
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31.03.2019  
Date .....

### CERTIFICATE

This is to certify that Ambolil Aryavaidyasala, Puthuval, Pathanapuram provided the plant materials necessary for the project works of the students during the academic year 2018-2019

**DEVI PRIYA M.**  
Assistant Professor of Botany  
St. Thomas College  
Pazhavangadi P.O, Ranni - 689 673  
Pathanamthitta  
E-mail: [devi.priya.m@gmail.com](mailto:devi.priya.m@gmail.com)





# Department of Botany

## St. Thomas College

Pazhavangadi P.O., Ranni, Pathanamthitta- 689673

E-mail – [botanydeptstcranni@gmail.com](mailto:botanydeptstcranni@gmail.com)

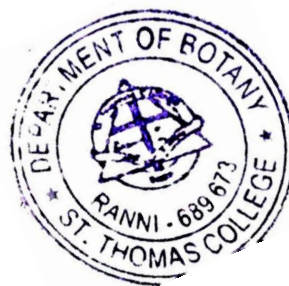
Ref.....

Date 31.03.2019

### CERTIFICATE

This is to certify that Poonkavanam Gardens provided the plant materials necessary for the conducting practicals for the students during the academic year 2018-19

**DEVIPRIYA M.**  
Assistant Professor of Botany  
St. Thomas College  
Pazhavangadi P.O, Ranni - 689 673  
Pathanamthitta  
E-mail: [devi.priya.m@gmail.com](mailto:devi.priya.m@gmail.com)



# Studies on seed propagation in Indian plum ( *Flacourtia jangomas* (Lour) Raeusch)

## Dissertation

Submitted to the Mahatma Gandhi University, Kottayam  
in partial fulfillment of requirements for the award of  
**BACHELORS DEGREE IN BOTANY**

BY

MAHESWARI P. M  
(Reg. No 160021031967)



March 2019

DEPARTMENT OF BOTANY  
ST. THOMAS COLLEGE,  
RANNY, PATHANAMTHITTA, KERALA

Valued by  
1. 5.11  
2. 11.11

Amithing



# Studies on seed propagation in Indian plum ( *Flacourtia jangomas* (Lour) Raeusch)

## Dissertation

Submitted to the Mahatma Gandhi University, Kottayam  
in partial fulfillment of requirements for the award of  
**BACHELORS DEGREE IN BOTANY**

BY

AKHILA SUSAN TOMY  
(Reg. No 160021031972)



March 2019

DEPARTMENT OF BOTANY  
ST. THOMAS COLLEGE,  
RANNY, PATHANAMTHITTA, KERALA

valued by  
1 B.C.P.  
2 M.K.H.

Devi King



# **Studies on the Calcium Oxalate Crystals of some Selected plants of Araceae**

## **Dissertation**

**Submitted to the Mahatma Gandhi University, Kottayam  
in partial fulfillment of requirements for the award of  
BACHELORS DEGREE IN BOTANY**

**BY**

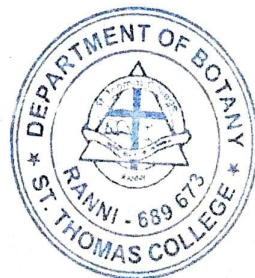
**VIVEK SOJAN  
(Reg. No 160021031990)**



**March 2019**

**DEPARTMENT OF BOTANY  
ST. THOMAS COLLEGE,  
RANNY, PATHANAMTHITTA, KERALA**

*Valued by*  
*1. B...*  
*2. Weeb*



*Due King*