

UNIVERSITY OF CALICUT

B.Sc. DEGREE PROGRAMME IN POLYMER CHEMISTRY (LRP Pattern)

(CBCSSUG 2019)

UNDER CHOICE BASED CREDIT AND SEMESTER SYSTEM

SCHEME AND SYLLABI

2019 ADMISSION ONWARDS



UNIVERSITY OF CALICUT

Abstract

General and Academic - Faculty of Science - Syllabus of BSc Polymer Chemistry Programme (LRP Pattern) under CBCSS UG Regulations 2019 with effect from 2019 Admission onwards - Implemented - Orders Issued

	G & A - IV - J	
U.O.No. 9085/2019/Admn		Dated, Calicut University.P.O, 09.07.2019

Read:-1. U.O.No. 4368/2019/Admn dated 23.03.2019

2. Item No. 1 of the minutes of the meeting of the Board of Studies in Polymer Chemistry held on 24.06.2019

3. Item No. I.34 of the minutes of the meeting of Faculty of Science held on 27.06.2019

<u>ORDER</u>

The Regulations for Choice Based Credit and Semester System for Under Graduate (UG) Curriculum 2019 (CBCSS UG Regulations 2019) for all UG Programmes under CBCSS-Regular and SDE/Private Registration w.e.f. 2019 admission has been implemented vide paper read first above.

The meeting of Board of Studies in Polymer Chemistry held on 24/06/2019 has approved the Syllabus of B Sc Polymer Chemistry Programme (LRP Pattern) in tune with the new CBCSS UG Regulations with effect from 2019 Admission onwards, vide paper read second above.

The Faculty of Science at its meeting held on 27/06/2019 has approved the minutes of the meeting of the Board of Studies in Polymer Chemistry held on 24/06/2019, vide paper read third above.

Under these circumstances, considering the urgency, the Vice Chancellor has accorded sanction to implement the Scheme and Syllabus of B Sc Polymer Chemistry Programme (LRP Pattern) in accordance with the new CBCSS UG Regulations 2019, in the University with effect from 2019 Admission onwards, subject to ratification by the Academic Council.

The Scheme and Syllabus of B Sc Polymer Chemistry Programme (LRP Pattern) in accordance with CBCSS UG Regulations 2019, is therefore implemented in the University with effect from 2019 Admission onwards.

Orders are issued accordingly. (Syllabus appended).

Biju George K

Assistant Registrar

То

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

Forwarded / By Order

Section Officer



Page 1 of 117

CREDITS AND MARKS DISTRIBUTION IN EACH SEMESTER

Total Credits: 120

Semester	Course	Credits	Marks
	Common course: English	4	100
	Common course: English	3	75
	Common course: Additional Language	4	100
	Core Course I: Theoretical and Inorganic Chemistry- I	2	75
Ι	Complementary course: Mathematics	3	75
	Complementary course: Physics	2	75
	Total	18	500
	Common course: English	4	100
	Common course: English	3	75
	Common course: Additional Language	4	100
	Core Course II: Theoretical and Inorganic Chemistry- II	2	75
II	Complementary course: Mathematics	3	75
	Complementary course: Physics	2	75
	Total	18	500
	General course I	4	100
	General course II	4	100
	Core Course III: Physical Chemistry-I	3	75
ш	Complementary course: Mathematics	3	75
	Complementary course: Physics	2	75
	Total	16	425
	General course III	4	100
	General course IV	4	100
	Core Course IV: Organic Chemistry-I	3	75
	Core Course V: Inorganic Chemistry Practical-I	4	100
137	Complementary course: Mathematics	3	75
1 V	Complementary course: Physics	2	75
	Complementary course: Physics Practical	4	100
	Total	24	625
	Core Course VI: Inorganic Chemistry-III	3	75
	Core Course VII: Organic Chemistry-II	3	75
V	Core Course VIII: Physical Chemistry-II	3	75
v	Open course	3	75
	Total	12	300
	Core Course IX: Inorganic Chemistry-IV	3	75
	Core Course X: Organic Chemistry-III	3	75
	Core Course XI: Physical Chemistry-III	3	75
	Core Course XII: Polymer Chemistry-I	3	75
	Core Course XIII: Elective	2	75
	Core Course XIV: Physical Chemistry Practical	4	100
VI	Core Course XV: Organic Chemistry Practical	4	100
	Core Course XVI: Inorganic Chemistry Practical-II	4	100
	Core Course XVII: Inorganic Chemistry Practical-III	4	100
	Core Course XVIII: Project Work	2	75
	Total	32	850



PRINCIPAL M.E.S KEVEEYAM COLLEGE VALANCHERY, PIN 676552 MALAPPURAM Page 10 of 117

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SEMESTER VI Course Code: CHE6B18(Pr) Core Course XVIII: PROJECT WORK

Total Hours: 32; Credits: 2; Hours/Week: 2 (Semester V); Total Marks 75 (Internal 15 &

External 60)

CHE6B18(Pr)	PROJECT WORK	L	Т	Р	C				
		0	0	2	2				
Objective (s)	To develop skill in scientific research, critical thinking and reasoning.								
Course outcome	Course outcome (s)								
CO1	To understand the scientific methods of research project.								
CO2	To apply the scientific method in life situations.								
CO3	To analyse scientific problems systematically.								

Guidelines

1. Students shall undertake the project work related to chemistry only.

2. The UG level project work is a group activity, maximum number of students being limited to five. However, each student shall prepare and submit the project report separately.

3. Head of the department must provide the service of a teacher for supervising the project work of each group. A teacher can guide more than one group, if necessary.

4. The students must complete the project in semester V. However, the evaluation of the project report will be carried out at the end of semester VI.

5. Project work can be experimental, theoretical or both.

6. No two groups in the same institution are permitted to do project work on the same problem. Also the project must not be a repetition of the work done by students of previous batches.

7. Each group must submit a copy of the project report to be kept in the department.

8. The project report must be hard bound, spiral bound or paper back.

9. The project report shall be divided as, Chapter I: Introduction, Chapter II: Review of literature, Chapter III: Scope of the research problem, Chapter IV: Materials and methods, Chapter V: Results and discussion, Chapter VI: Conclusion and suggestions, if any, and Chapter VII: Bibliography.

10. Each student must present the project report before the external examiner during project evaluation.



PRINCIPAL M.E.S KEVEEYAM COLLEGE VALANCHERY, PIN 676552 MALAPPURAM

Activated Charcoal from Banana Biomaterials: Unveiling Adsorption Dynamics with Methylene Blue Dye

A Project report submitted to

UNIVERSITY OF CALICUT

In partial fulfillment of the requirements for the degree of

Bachelor of Science

in

POLYMER CHEMISTRY

Submitted by

- 1. MUFEEDA M. (Reg No: KVAVSPO007)
- 2. SHAMLIYA P. (Reg No: KVAVSPO014)
- 3. BALIH A. (Reg No: KVAVSPO032)
- 4. Sanjay E. K. (Reg No: KVAVSPO036)



MES KEVEEYAM COLLEGE, VALANCHERY, MALAPPURAM, KERALA

Under the guidance of

Dr. SOUMINI C.

Assistant Professor

Research and PG Department of Chemistry

MES KEVEEYAM COLLEGE, VALANCHERY

MARCH 2024



MES KEVEEYAM COLLEGE, VALANCHERY (NAAC Accredited with A grade) Phone: 0494-2644380, 2642670, 2641347(Fax) Website: <u>www.meskvmcollege.org</u> Email: <u>principal@meskvmcollege.org</u>

March 2024

CERTIFICATE

This is to certify that, the project report entitled "Activated Charcoal from Banana Biomaterials : Unveiling Adsorption Dynamics with Methylene Blue Dye" submitted by

- 1. Mufeeda M. (Reg No: KVAVSPO007)
- 2. Shamliya P. (Reg No: KVAVSPO014)
- 3. Balih A. (Reg No: KVAVSPO032)
- 4. Sanjay E. K. (Reg No: KVAVSPO036)

of MES Keveeyam College Valanchery, in partial fulfillment of requirements of the degree of **Bachelor of Science in Polymer Chemistry**, under the guidance of Dr. Soumini C., Assistant Professor, Research and post graduate department of chemistry, MES Keveeyam College Valanchery, and that it has not been submitted elsewhere for the award of any degree or diploma.

Head of the department

Place: Valanchery

Date:

SYNTHESIS AND CHARACTERIZATION OF CURCUMIN LOADED IRON OXID (MAGNETITE) NANOPARTICLE

Project submitted to the University of Calicut in partial

Fulfilment of the requirement for the Degree of

Bachelor of Science in Polymer Chemistry

by

MUHAMMED SALIH K P [KVAVSP0019] DILSHA PP [KVAVSP0024] SHAFNA PALAPPURA [KVAVSP0029] SHANA C H [KVAVSP0015] Under the supervision of

Dr. SAIFUNNEESA T K

Project Supervisor



RESEARCH AND POST GRADUATE DEPARTMENT OF CHEMISTRY MES KEVEEYAM COLLEGE, VALANCHERY

2023-2024

CERTIFICATE

This is to certify that the project entitled "SYNTHESIS AND CHARACTERIZATION OF CURCUMIN LOADED IRON OXIDE (MAGNETITE) NANOPARTICLE" submitted to University of Calicut for the award of Bachelor of Science in Polymer Chemistry is a record of original work done by Muhammed Salih K P, Dilsha P P, Shana C H and Shafna Palappura of VI semester BSc Polymer Chemistry under the guidance of Dr. Saifunneesa T K, Assistant Professor Department of Chemistry during the year 2023-2024.

Dr. SAIFUNNEESA T K

Assistant Professor

Research and Postgraduate Department of Chemistry

Counter Signed by

Head of the Research and Postgraduate

Department of Chemistry

Dalth

Prof. Rukkiya K.M.

External Examiner

PRINCIPAL M.E.S KEVEEYAM COLLEGE VALANCHERY, PIN 676552 MALAPPURAM



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Study on synthesis, Characterization and metal sensing capacity of 4-Amino Antipyrine Schiff base

A Project report submitted to

UNIVERSITY OF CALICUT

In partial fulfillment of the requirements for the degree of

Bachelor of Science

in

POLYMER CHEMISTRY

Submitted by

HIBA E K (KVAVSPO005) RUSDA K (KVAVSPO012) · ARYA RAMACHANDRAN K P (KVAVSPO022) RIJULA DINESH (KVAVSPO027)



MES KEVEEYAM COLLEGE, VALANCHERY, MALAPPURAM, KERALA

Under the guidance of

JASEELA MA

Assistant Professor

Research and PG Department of Chemistry

MES KEVEEYAM COLLEGE, VALANCHERY

MARCH 2024

MES KEVEEYAM COLLEGE, VALANCHERY (NAAC Accredited with A grade) Phone: 0494-2644380, 2642670, 2641347(Fax) Website: <u>www.meskvmcollege.org</u> Email: <u>principal@meskvmcollege.org</u>

March 2024

CERTIFICATE

This is to certify that, the project report entitled "Study on synthesis, Characterization and metal sensing capacity of 4-Amino Antipyrine Schiff base" submitted by Hiba E K (Reg no:KVAVSPO005),Rusda K (Reg no:KVAVSPO012),Arya Ramachandran K P (Reg no:KVAVSPO022),Rijula Dinesh (Reg no:KVAVSPO027) of MES Keveeyam College Valanchery, in partial fulfillment of requirements of the degree of Bachelor of Science in Polymer Chemistry, under the guidance of Jaseela M A ,Assistant Professor, Research and post graduate department of chemistry, MES Keveeyam College Valanchery, and that it has not been submitted elsewhere for the award of any degree or diploma.

Place: Valanchery

Date: 25-3-234



PRINCIPAL M.E.S KEVEEYAM COLLEGE VALANCHERY, PIN 676552 MALAPPURAM

Supervisor Project ELA M A

SENCING PROPERTY OF CsPbBr3 NANOCRYSTALS COATED PAPER SUBSTRATE



SUBMITTED TO THE UNIVERSITY OF CALICUT IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE BACHELOR DEGREE OF SCIENCE (CHEMISTRY) BY

> FEHMIJA ROSHNI T T RANA RASHEED ARDRA K C MISBAHUL HAQ



UNDER THE GUIDANCE OF K.H. FAUSIA ASSISTANT PROFESSOR DEPARTMENT OF CHEMISTRY MES KEVEEM COLLEGE, VALANCHERY, MARCH 2024

1

RESEARCH AND POST GRADUATE DEPARTMENT OF CHEMISTRY M.E.S KEVEEYAM COLLEGE, VALANCHERY

CERTIFICATE



This is to certify that, FEHMIJA ROSHNI T T, RANA RASHEED, ARDRA K C, MISBAHUL HAQ has carried out a project work entitled "SENCING PROPERTY OF CsPbBr₃ PEROVSKITE NANOCRYSATALS COATED PAPER SUBSTRATE" at Post graduate Department of chemistry M.E.S Keveeyam college, Valanchery and submitted in partial fulfilment of the requirement for the award of the Degree of Bachelor of science in chemistry of the university of Calicut during the academic year of 2023-2024.

3

Date: March 2024 Place: Valanchery

DINUM

Head of the department of Chemistry

PRINCIPAL M.E.S KEVEEYAM COLLEGE VALANCHERY, PIN 676552 MALAPPURAM

SQUARAINE DYES: SYNTHESIS AND HARACTERISATION BY SPECTROSCOPIC TECHNIQUES

project report submitted to the University of Calicut in partial fulfilment of the requirements for the award of the degree of

BACHELOR OF SCIENCE

in POLYMER CHEMISTRY

Submitted by

BINU RIYAZI K-KVAVSP0002 RAIHANATH P-KVAVSP0009 SUHANA SHERIN V P-KVAVSP0017 SREELAKSHMI.NP-KVAVSP0031 IITHIN KRISHNA M - KVAVSP0033



Under the guidance of

Dr. JISHA V. S. Assistant Professor Research and PG Department of Chemistry MES KEVEEYAM COLLEGE, VALANCHERY

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PRINCIPAL M.E.S.KEVEEYAM.COLLESE VALANCHERY, PIN 676552 MALAPPURAL

MARCH 2024



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CERTIFICATE

This is to certify that, the project report entitled " SQUARAINE DYES: SYNTHESIS AND CHARACTERISATION BY SPECTROSCOPIC TECHNIQUES" submitted by BINU RIYAZI K-KVAVSP0002, RAIHANATH P-KVAVSP0009, SUHANA SHERIN V P-KVAVSP0017, SREELAKSHMI.NP-KVAVSP0031, JITHIN KRISHNA M – KVAVSP0033 of MES Keveeyam College Valanchery, in partial fulfillment of requirements of the degree of Bachelor of Science in Polymer Chemistry, under the guidance of Dr. JISHA V S., Assistant Professor, Research and Post Graduate Department of Chemistry; MES Keveeyam College Valanchery, and that it has not been submitted elsewhere for the award of any degree or diploma.

Place: Valanchery

Date: 20-03-2024

 $\Sigma(2)$

Head of the Department

PRINCIPA M.E.S. NEVER VAM COLLESSE VALANCHERY, PUMATRASS MALAPPURALI



PREPARATION OF GRAPHENE QUANTUM DOTS(GQDs)BY GLUCOSE PYROLYSIS

A Project report submitted to

UNIVERSITY OF CALICUT

In partial fulfillment of the requirements for the degree of

Bachelor of Science

in

POLYMER CHEMISTRY

Submitted by

AFLA MAHJABIN.C FATHIMA VARDA.T NIDA.P SREELAKSHMI.C SHIFA JASMIN.P



MES KEVEEYAM COLLEGE, VALANCHERY, MALAPPURAM, KERALA

Under the guidance of

Dr.SURAJA.PV

Assistant Professor

Research and PG Department of Chemistry





P.O.Valanchery, Malappuram Dist, Karala, Pini 676 552, Phonei 0464-2642670, 0494 2644380 www.meskeveeyamcollege.ac.in principal@meskeveeyamcollege.ac.in

Realized Hed Wills 'Ad' Grade by NAAC (8.445/ore) Adeq by Gov of Years and Addington the University of Calcul 15() 5(9)1 (20)15 certified institution

CERTIFICATE

This is to	certify that t	fy that the project entitled Preparation of Graphene Quantum Dots (GQDs) by									
glucose	pyrolysis	is	an	authentic	record	of	the	project	work	done	by
NELA	MAHT	JAB	N.	CKI	IANS	009	(10				
NI	DA·K		KV	ANSPO	(3000)					
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under the supervision and guidance of **Dr. Suraja PV** (Asst. Professor, PG Department of Chemistry, MES Keveeyam College, Valanchery) in partial fulfillment of the requirements for the award of the degree of B.Sc. Programme in Polymer Chemistry.

PRINCIPAL M.E.S KEVEEYAM COLLEGE VALANCHERY, PIN 676552 MALAPPURAM

Dr Suraja PV (Assistant Professor)

Place: Valanchery Date: 22-03-24

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PREPARATION AND CHARACTERISATION OF PHENOL-FORMALDEHYDE RESIN MODIFIED WITH CASHEW NUT SHELL OIL (A BIOPOLYMER)

A Project report submitted to

UNIVERSITY OF CALICUT

In partial fulfillment of the requirements for the degree of

Bachelor of Science

in

POLYMER CHEMISTRY

Submitted by

FATHIMATH SAFVANA KK (KVAVSPO003) RAMSHEEDA EK (KVAVSPO010) KRISHNA RAMAKRISHNAN KP (KVAVSPO026) LUBNA NK (KVAVSPO037) VIVEKVARMA P (KVAVSPO020)



MES KEVEEYAM COLLEGE, VALANCHERY, MALAPPURAM, KERALA

Under the guidance of

Mrs. K M RUKKIYA

Head of the Department

Research and PG Department of Chemistry

MES KEVEEYAM COLLEGE, VALANCHERY

MARCH 2024



MES KEVEEYAM COLLEGE, VALANCHERY (NAAC Accredited with A grade) Phone: 0494-2644380, 2642670, 2641347(Fax) Website: <u>www.meskymcollege.org</u>

Email: principal@meskymcollege.org

March 2024

CERTIFICATE

This is to certify that, the project report entitled " preparation and characterisation of phenol-formaldehyde resin using cashew nut shell oil (a biopolymer)" submitted by. VIVEKVARMA P(Reg No: KVAVSPO020), FATHIMATH SAFVANA KK(Reg No:KVAVSPO003), LUBNA NK(Reg No:KVAVSPO037), RAMSHEEDA EK(Reg No:KVAVSPO010), KRISHNA RAMAKRISHNAN KP(Reg No:KVAVSPO026), of MES Keveeyam College Valanchery, in partial fulfillment of requirements of the degree of Bachelor of Science in Polymer Chemistry, under the guidance of Mrs. K M RUKKIYA, Head of the Department, Research and post graduate department of chemistry, MES Keveeyam College Valanchery, and that it has not been submitted elsewhere for the award of any degree or diploma.

Place: Valanchery

Project Supervisor

(Head of the Department)

Mrs. K M RUKKIYA

Date:

UNIVERSITY OF CALICUT M.Sc. POLYMER CHEMISTRY (CBCSS PG)

Syllabus with effect from 2019 admission

The pattern of the Programme

a) The name of the programme shall be M.Sc. Polymer Chemistry under CBCSS pattern.

b) The programme shall be offered in four semesters within a period of two academic years.

c) Eligibility for admission will be as per the rules laid down by the University from time to time.

d) Details of the programme offered are given in Table 1. The programme shall be conducted in accordance with the programme pattern, the scheme of examination and syllabus prescribed.

Theory Courses

In the first three semesters there will be four theory courses and in the fourth semester three theory courses. All the theory courses in the first and second semesters are core courses. In the third semester, there will be three core theory courses and one elective theory course. In the fourth semester, there will be one core theory course and two elective theory courses.

Practical Courses

In each semester, there will be three core practical courses. However, the practical examinations will be conducted only at the end of second and fourth semesters.

Project and Viva-Voce

Each student has to perform an independent research project work during the programme under the guidance of a faculty member of the college/scientists or faculties of recognized research institutions. Each student has to submit three copies of the project dissertation for valuation at the end of the fourth semester. After the valuation one copy may be returned to the student, one may be given to the project supervisor and the third one should be kept in the department/college library. Evaluation of the project work (4 credits) will be done on a separate day at the end of the fourth semester, after the theory examinations. *Viva-voce* on the project will also be done on the same day.

A comprehensive *Viva-voce* examination (2 credits), based on all the theory and practical courses, will be conducted at the end of the fourth semester, on a separate day.



UNIVERSITY OF CALICUT

Abstract

General and Academic - Faculty of Science - Syllabus of MSc Polymer Chemistry Programme under CBCSS PG Regulations 2019 with effect from 2019 Admission onwards - Implemented - Orders Issued

	G & A - IV - J	
U.O.No. 11462/2019/Admn		Dated, Calicut University.P.O, 26.08.2019

Read:-1. U.O.No. 4487/2019/Admn dated 26.03.2019

2. Item No. 2 of the minutes of the meeting of the Board of Studies in Polymer Chemistry held on 24.06.2019

3. Item No. I.34 of the minutes of the meeting of Faculty of Science held on 27.06.2019

<u>ORDER</u>

The Regulations for Choice Based Credit and Semester System for Post Graduate (PG) Curriculum - 2019 (CBCSS PG Regulations 2019) for all PG Programmes under CBCSS for Affiliated Colleges and SDE/PrivateRegistration w.e.f. 2019 admission has been implemented vide paper read first above.

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The Faculty of Science at its meeting held on 27/06/2019 has approved the minutes of the meeting of the Board of Studies in Polymer Chemistry held on 24/06/2019, vide paper read third above.

Under these circumstances, considering the urgency, the Vice Chancellor has accorded sanction to implement the Scheme and Syllabus of MSc Polymer Chemistry Programme in accordance with new CBCSS PG Regulations 2019, for affiliated colleges in the University with effect from 2019 Admission onwards, subject to ratification by the Academic Council.

The Scheme and Syllabus of M Sc Polymer Chemistry Programme for affiliated colleges in accordance with CBCSS PG Regulations 2019, is therefore implemented in the University with effect from 2019 Admission onwards.

Orders are issued accordingly. (Syllabus appended)

Biju George K

Assistant Registrar

То

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

Forwarded / By Order

Section Officer

Grading and Evaluation

(1) Accumulated minimum credit required for successful completion of the programme shall be 80.

(2) A project work of 4 credits is compulsory and it should be done during the programme. Project evaluation should be conducted by external examiners.

(3) A comprehensive *Viva-voce* Examination (carrying 2 credits) may be conducted by external examiners at the end of the fourth semester on a separate day.

(4) Evaluation and Grading should be done by the direct grading system. All grading during the evaluation of courses and the semester is done on a 6-point scale (A+, A, B, C, D, E). Grading in the 6-point scale is as given below.

Grade	Grade point
A+	5
А	4
В	3
С	2
D	1
Е	0

The calculation of GPA, SGPA & CGPA Shall be based on the direct grading system using a 10-point scale as detailed below.

Letter	Grade	Range of	Merit /	
Grade	Range	Percentage (%)	Indicator	
0	4.25 - 5.00	85.00 - 100.00	Outstanding	
A+	3.75 - 4.24	75.00 - 84.99	Excellent	
А	3.25 - 3.74	65.00 - 74.99	Very Good	
B+	2.75 - 3.24	55.00 - 64.99	Good	
В	2.50 - 2.74	50.00 - 54.99	Above	
			Average	
C	2.25 - 2.49	45.00 - 49.99	Average	
Р	2.00 -2.24	45.00 - 49.99	Pass	
F	< 2.00	Below 40	Fail	
Ι	0	-	Incomplete	
Ab	0	- Absent		

Pass in a course: P grade and above (GPA 2.00 and above). Pass in all courses in a semester is compulsory to calculate the SGPA. GPA, SGPA, and CGPA will be between 0 to 5 and in two decimal points. An overall letter grade (Cumulative Grade) for the whole programme shall be awarded to the student based on the value of CGPA using a 10-point scale given below.

2

Semester III

Sl.	Code No.	Name of Course	Hours/Week	Credits
No				
1	PCH3C09	INORGANIC CHEMISTRY-II	4	4
2	PCH3C10	PHYSICAL CHEMISTRY-II	4	4
3	PCH3C11	INSTRUMENTAL METHODS AND	4	4
		COMPUTATIONAL CHEMISTRY		
4	PCH3E01	POLYMER MATERIALS	3	4
5	PCH3L07	POLYMER ANALYSIS AND	3	-
		PREPARATIONS PRACTCAL-I		
6	PCH3L08	POLYMER CHEMISTRY PRACTICAL-I	3	-
7	PCH3L09	PHYSICAL CHEMISTRY PRACTICAL-III	4	
TOT	AL		25	CORE 12
				ELECTIVE 4

Exam: 3 hours (Internal 20%, External 80%) Total Credits: Core 12 & Elective 4

Semester IV

Exam: 3 hours (Internal 20%, External 80%) Total Credits: Core 13, Elective 8, Project 4, Viva 2

S	Code No.	Name of Course	Hours/Wee	Credits
1.			k	
Ν				
0				
1	PCH4C12	PHYSICAL CHEMISTRY OF POLYMERS	4	4
2	PCH4E02	TESTING AND CHARACTERISATION OF POLYMERS	4	4
4	PCH4E03	PLASTIC AND FIBER TECHNOLOGY	4	4
		OR		
		POLYMER NANOTECHNOLOGY		
5	PCH4L10	POLYMER ANALYSIS AND	3	3
		PREPARATIONS PRACTICAL-II		
6	PCH4L11	POLYMER CHEMISTRY PRACTICAL-II	3	3
7	PCH4L12	PHYSICAL CHEMISTRY PRACTICAL-IV	4	3
8	PCH4P01	RESEARCH PROJECT	3	4
9	PCH4V01	VIVA VOCE		2
TO	ΓAL		25	CORE 13
				ELECTIVE 8
				PROJECT 4
				VIVA 2
TO	TAL CREDIT	IS FOR THE PROGRAMME:	·	80

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PRINCIPAL M.E.S KEVEEYAM COLLEGE VALANCHERY, PIN 676552 MALAPPURAM



SYNTHESIS AND CHARACTERIZATION OF CARBON QUANTUM DOTS (CQDs) FOR THE DETECTION OF HEAVY METAL IONS

A Dissertation Submitted to the University of Calicut in Partial Fulfiliment of the Requirement for the Degree of

Master of Science in Polymer Chemistry

Submitted By

FATHIMA AMNA REG NO: KVAWMPC004



Research and Postgraduate Department of Chemistry MES KEVEEYAM COLLEGE VALANCHERY

Under the supervision of

Prof. (Dr.) SURESH MATHEW



School of Chemical Sciences Mahatma Gandhi University Priyadarshini Hills P.O Kottayam, Kerala 686 560

May 2024



Dr. Suresh Mathew Professor of Eminence

School of Chemical Sciences

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Priyadarsini Hills P.O - 686 560 Kottayam, Kerala, INDIA E-mail: <u>sureshmathewmau@gmail.com</u> Ph: +91-9447287247

> P. D Hills 08/07/2024

CERTIFICATE

This is to certify that the thesis entitled "Synthesis and Characterization of Carbon Quantum dots (CQDs) for the detection of heavy metal ions" is an authentic record of research work carried out by Ms. FATHIMA AMNA (Reg. No. KVAWMPC004), student of MSc Chemistry, MES Keveeyam College Valanchery, Maiappuram, Kerala, in partial fulfillment for the award of the degree of Master of Science in Chemistry, under my supervision at School of Chemical Sciences, Mahatma Gandhi University, Kottayam, Kerala. The work presented in this dissertation has not been submitted for any degree or diploma earlier.

Dr. Suresh Mathew

PRINCIPAL M.E.S KEVEEYAM COLLEGE VALANCHERY, PIN 676552 MALAPPURAM



SYNTHESIS AND CHARACTERIZATION OF C-DOT-1T/2H MoS₂ NANOCOMPOSITE FOR THE PHOTOCATALYTIC DEGRADATION OF CIPROFLOXACIN

A Dissertation Submitted to the University of Calicut in Partial Fulfillment of the Requirement for the Degree of

Master of Science in Polymer Chemistry

Submitted By

RUMSHINA SHERIN

Register Number: KVAWMPC013



Research and Postgraduate Department of Chemistry MES KEVEEYAM COLLEGE VALANCHERY

Under the supervision of **Prof. (Dr.) SURESH MATHEW**



School of Chemical Sciences Mahatma Gandhi University Priyadarshini Hills P.O Kottayam, Kerala 686 560 May 2024







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E-mail: <u>sureshmathewmgu@gmail.com</u> Ph: +91-9447287247

> P. D Hills 08/07/2024

CERTIFICATE

This is to certify that the thesis entitled "Synthesis and Characterization of C-dot-1T/2H MoS₂ Nanocomposite for the Photocatalytic Degradation of Ciprofloxacin" is an authentic record of research work carried out by Ms. RUMSHINA SHERIN (Reg. no. KVAWMPC013), student of MSc Polymer Chemistry, MES Keveeyam College Valanchery, Malappuram, Kerala, in partial fulfillment for the award of the degree of Master of Science in Polymer Chemistry, under my supervision at School of Chemical Sciences, Mahatma Gandhi University, Kottayam, Kerala. The work presented in this dissertation has not been submitted for any degree or diploma earlier.

Dr. Suresh Mathew

PRINCIPAL M.E.S KEVEEYAM COLLEGE VALANCHERY, PIN 676552 MALAPPURAM



SYNTHESIS AND CHARACTERIZATION OF THIOACETAMIDE – LINKED BENZIMIDAZOLE – THIAZOLE HYBRIDS

A dissertation Submitted to

University of Calicut

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

Master of Science in Polymer Chemistry

by

Ms. FATHIMA THIRIKKOTTU

(Registration No. KVAWMPC006)



RESEARCH AND PG DEPARTMENT OF CHEMISTRY

MES KEVEEYAM COLLEGE, VALANCHERY

Under the Guidance of

Dr. JANARDHAN BANOTHU



DEPARTMENT OF CHEMISTRY NATIONAL INSTITUTE OF TECHNOLOGY CALICUT CALICUT, KERALA – 673 601







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एन.अई.टी. कॅापस (पी.ओ.). कालिकट. केरल 873801, भारत 🔶 NIT Campus (P.O.), Kozhikode, Kerala 873601, India

CERTIFICATE

This is to certify that the discutation entitled "Synthesis and Characterization of Thioacetamide – Linked Benzimiciazoio – Thiazole Hybrids" is a bona-fide record of the project work carried out by Ms. Fathims Thirikkottu (Reg.No.: KVAWMPC006) under my supervision at the Heterocyclic Chemistry Laboratory, Department of Chemistry, National Institute of Technology Calicut during March, 2024 - May, 2024. This work has been carried out in partial fulfillment for the award of degree in Master of Science in Chemistry under University of Calicut.

NIT Calicut 24-06-2024

Dr. Janardhan Banothu

Assistant professor Department of Chemistry NIT Calicut

Head

Department of Chemistry



GRAM SCALE SYNTHESIS OF SPIRO OXAZOLE COMPOUNDS FROM 8-CI/Br TRYPTANTHRIN *VIA* [3+2] CYCLOADDITION REACTION

A Dissertation Submitted to University of Calicut in Partial Fulfilment of the Requirement for the Degree of

Master of Science in Polymer Chemistry

Submitted By

THASNEEM P K

Register number: KVAWMPC016



Research and PG Department of Chemistry MES Keveeyam College, Valanchery

Under the supervision of **Dr. ANI DEEPTHI**

Assistant Professor



Department of Chemistry University of Kerala, Kariavattom Thiruvananthapuram- 695581 May 2024

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RESEARCH AND PG DEPARTMENT OF CHEMISTRY MES KEVEEYAM COLLEGE, VALANCHERY MALAPPURAM, KERALA- 676552 NAAC Re-Accredited with 'A+' Grade (3.44)

CERTIFICATE

This is to certify that the project work entitled "GRAM SCALE SYNTHESIS OF SPIRO OXAZOLE COMPOUNDS FROM 8-CI/Br TRYPTANTHRIN *VIA* [3+2] CYCLOADDITION REACTION" which is submitted by Ms. THASNEEM P K for the award of Degree of Master of Science in Polymer Chemistry is a record of bonafide work done by her.

Valanchery May 2024



Head of Department of Chemistry

Dr. SOUMINI C Assistant Professor & HOD Research and PG Department of Chemistry MES Keveeyam College, Valanchery-676552

Hydrothermal Synthesis of Molybdenum Disulfide/Silver Nanoparticle Nanohybrid Electrocatalyst for Hydrogen Evolution Reaction

Project report submitted to Calicut University in partial fulfilment for

the award of the Degree of

MASTER OF SCIENCE in POLYMER CHEMISTRY

By

NAFILA K.P

(KVAWMPC011)

Research and PG Department of Chemistry Mes Keveeyam College, Valanchery

Calicut University, Kerala



Under the Supervision of

Dr. SHIMA P. D. Assistant Professor School of Chemical Sciences Swami Anantha Theertha Campus

Kannur University, Kerala







KANNUR UNIVERSITY SCHOOL OF CHEMICAL SCEINCES

Swami Anantha Theertha Campus, Payyanur Edat P.O., Kannur, Kerala, India, PIN: 670 327

CERTIFICATE

This is to certify that the project entitled "Hydrothermal Synthesis of Molybdenum Disulfide/Silver Nanoparticle Nanohybrid Electrocatalyst for Hydrogen Evolution Reaction" submitted to Calicut University in partial fulfillment of the requirements for the award of the Degree of Master of Science in Polymer Chemistry is a record of original work done by NAFILA K.P (Reg.No: KVAWMPC011) from School of Chemical Sciences, Swami Anantha Theertha Campus, Kannur University under my supervision and guidance. The work presented in this dissertation has not been submitted for any other degree/diploma of this or any other university.

Spima

Dr. SHIMA P. D.

Dr. SHIMA. P.D Assistant Professor Department of Chemistry (Swami Anandatheertha Campus-Payyanur) Kannur University, Kerala - 670 327

Place: Payyanur Date: 22/05/2



STUDY ON THE RATE OF FERMENTATION AND ALCOHOL PRODUCTION ON DIFFERENT FRUITS JUICES

A Dissertation Submitted to University of Calicut in Partial Fulfillment of the Requirement

for the Degree of

Master of Science in Polymer Chemistry

Submitted By

FARSANA VM

Register Number: KVAWMPC003



Research and PG Department of Chemistry

MES KEVEEYAM COLLEGE, Valanchery

Malappuram- 676552

Under the supervision of

Ms. GOPIKA A

Senior Chemist



WATERLAB ANALYTICAL LABORATORY AND RESEARCH CENTRE LLP,

PARAMMAL

May 2024

107/24

Date: 22/07/2024

Certificate no: WL/PRJ/2024/014

CERTIFICATE

This is to certify that the dissertation entitled "STUDY ON THE RATE OF FERMENTATION AND ALCOHOL PRODUCTION ON DIFFERENT FRUITS JUICES" submitted to Calicut University in partial fulfillment of the requirements for the award of the Degree of MASTER OF SCIENCE IN POLYMER CHEMISTRY, is a bonafide record of the original project work done by Mrs. Farsana V M, Reg. No: KVAWMPC003, MES Keveeyam College, Valanchery, at the Chemical Testing Laboratory of this center under our guidance from 2nd April 2024 to 29th April 2024

Issued by		Verifi	ied by	Approved by
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Gopika Sr. Chen	A nist	Arunjith M.T Laboratory manager		Mahesh P Laboratory Head
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A NOVEL ROUTE OF GRAPHENE QUANTUM DOT DYE PREPARATION

A Dissertation Submitted to the University of Calicut in Partial Fulfillment of the Requirement for the Degree of

Master of Science in Polymer Chemistry

Submitted By

JISHNA.KP

Register Number: KVAWMPC007



Research and PG Department of Chemistry MES KEVEEYAM COLLEGE, Valanchery Malappuram-676552

Under the supervision of

PROF. Dr. BINITHA NN



DEPARTMENT OF CHEMISTRY

UNIVERSITY OF CALICUT

Malappuram, 673635



May 2024





UNIVERSITY OF CALICUT (Accredited by NAAC with A+ Grade) Department of Chemistry Green Graphene Laboratory



Dr. Binitha N N Professor Calicut University P.O., Kerala - 673635, INDIA 20494 2407414 Email: dr_binitha_nn@uoc.ac.in

22.07.2024

CERTIFICATE

This is to certify that the project work entitled "A NOVEL ROUTE OF GRAPHENE QUANTUM DOT DYE PREPARATION" is an authentic record of the work done by JISHNA K P (Reg No: KVAWMPC007) under my guidance and submitted to the University of Calicut for the partial fulfillment of the requirement for the award of the degree of Master of Science in Chemistry. The work presented in this project has not been submitted for any other degree before.

Prof. Binitha N N

Dinicha. N.N

Dr. BINITHA N. N. Professor Department of Chemistry University of Calicut Malappuram (Dist.), Kerala - 673635

SYNTHESIS AND CHARACTERIZATION OF THIADIAZOLOQUINOXALINE BASED DONOR ACCEPTOR SYSTEMS

A Dissertation Submitted to University of Calicut in Partial Fulfillment of the Requirement for the Degree of

Master of Science in Polymer Chemistry

Submitted By

NIGHITHA P P

Register Number: KVAWMPC012



Research and PG Department of Chemistry

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Malappuram- 676552

Under the supervision of

Dr. S. ANAS

Associate Professor



School of Chemical science

Mahatma Gandhi University

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May 2024







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CERTIFICATE

This is to certify that the thesis entitled "Synthesis and characterization of Thiadiazoloquinoxaline based donor acceptor systems" is an authentic record of research work by Ms. Nighitha. P.P (Reg. no. KVAWMPC012), student of MSc Polymer Chemistry, MES Keveeyam College Valanchery, Malappuram, Kerala, in partial fulfillment for the award of the degree of Master of Science in Polymer Chemistry, under our combined guidance at Advanced Molecular Materials and Research Centre (AMMRC), Mahatma Gandhi University, Kottayam, during the period from 01/03/2024 to 31/05/2024 in partial fulfilment for the requirement to award the degree of Master of Science in Chemistry.

Dr. Vineetha.P. K

(Project Supervisor)

Dr.S. Anas

(Co-Guide) Honorary Director, AMMRC

Kottayam

31/05/2024

Design, Synthesis and Characterization of Naphthalene Diimide based Covalent Organic Polymer

A Dissertation Submitted to University of Callent in Partial Fulfillment of the Requirement for the degree of

Master of Science in Polymer Chemistry

Submitted by

Nafeesathul Misiriya T

Register number: KVAWMPC010



Research and PG Department of Chemistry MES KEVEEYAM College, Valanchery

Under the Supervision of

Dr. Suneesh C.V.

Assistant Professor and Head



Department of Chemistry

University of Kerala

Thiruvananthapuram-695581

May 2024

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UNIVERSITY OF KERALA (NAAC Re-Accredited with 'A⁺⁺' Grade) Kariavattom Campus, Kariavattom P.O. Trivandrum-695581, Kerala

Dr. Suncesh C. V. Assistant Professor and Head Department of Chemistry Email: sunceshcv@gmail.com

CERTIFICATE

This is to certify that the dissertation entitled "Design, Synthesis and Characterization of Naphthalene Diimide based Covalent Organic Polymer" is a bonafide record of research work carried out by Ms.Nafeesathul Misiriya T under my supervision at Department of Chemistry, University of Kerala, Kariavattom (during March to May 2024) in partial fulfillment of the requirements for the award of Degree of Master of Science in Polymer Chemistry, University of Kerala. The present work or any part thereof has not been submitted to any other university or institution for the award of any degree or diploma.

Kariavattom May 2024



Dr. Suneesh C. V. (Supervising Guide)

Dr. SUNEESH C.V Assistant Professor & Head Department of Chemistry University of Kerala, Karlavattom Thiruvenanthepuram - 695 581

PRINCIPAL M.E.S KEVEEYAM COLLEGE VALANCHERY, PIN 676552 MALAPPURAM



2-QUINOLONE DERIVED CHALCONES : POTENTIAL CANDIDATES FOR DIVERSE APPLICATIONS

Project report submitted to the University of Calicut In partial fulfillment of the requirements for the award of the degree of

MASTER OF SCIENCE IN POLYMER CHEMISTRY



By

RISLA A K

REG NO: KVAWMPC018

Research and Post Graduate Department of Chemistry, MES Keveeyam College, Valanchery



Under the Supervision of

JASEELA M.A

Assistant professor

Dept. of Chemistry

MES KEVEEYAM COLLEGE, VALANCHERY







MES KEVEEYAM COLLEGE VALANCHERY Malappuram-Kerala

(NAAC Accredited with A Grade) Phone: 0494 – 2644380, 2642670, 2641347(Fax) <u>www.meskvmcollege.org</u>, Email: <u>principal@meskvmcollege.org</u>

Certificate

This is to certify that the project work entitled "2-QUINOLONE DERIVED CHALCONES: POTENTIAL CANDIDATES FOR DIVERSE APPLICATIONS" is an authentic record of the project work carried out by Ms RISLA AK under my supervision and guidance at the Department of Polymer Chemistry in partial fulfilment of the requirements for the award of degree of MASTER OF SCIENCE IN POLYMER CHEMISTRY under the faculty of MES KEVEEYEM COLLEGE, VALANCHERY affiliated to Calicut University, during the academic year 2022-2024.



JASEELA M.A Assistant professor

AN EFFICIENT LOW-COST ADSORBENT DERIVED FROM TAMARIND SHELL FOR THE REMOVAL OF METHYLENE BLUE FROM AQUEOUS SOLUTION

Dissertation submitted to UNIVERSITY OF CALICUT In partial fulfilment for the award of the degree of MASTER OF SCIENCE IN POLYMER CHEMISTRY

> BY SREELAKSHMI P (KVAWMPC014)

Research and PG Department of Chemistry Mes Keveeyam College, Valanchery Calicut University, Kerala



Under the Supervision of Dr. DIVYA P N HOD and Assistant professor Department of chemistry GOVERNMENT ARTS AND SCIENCE COLLEGE FOR WOMEN MALAPPURAM









Department of chemistry Government Arts and science College for women Malappuram, 676504, Kerala

CERTIFICATE

This is to certify that the project entitled " AN EFFICIENT LOW-COST ADSORBENT DERIVED FROM TAMARIND SHELL FOR THE REMOVAL OF METHYLENE BLUE FROM AQUFOUS SOLUTION " submitted to to the a University in partial fulfillment of the test memory for the award of the Degree of Master of Science in Polymer Chemistry is a record of original work done by SREELAKSHMI P (Reg.No: KVAWMPC014) from Department of Chemistry Government Arts and science college for women Malappuram, Calicut University under my supervision and guidance. The work presented in this dissertation has not been submitted for any other degree/diploma of this or any other university.

Dr. DIVYA P N Assistant professor Department of chemistry

Government Arts and science College for women, Malappuram

Place: M949PVR97 Date: 22 01 24

Electrochemical Sensing of Ascorbic Acid Using Silver Nanoparticle Anchored Molybdenum Disulfide Nanosheets

Project report submitted to Calicut University in partial fulfilment for

the award of the Degree of

MASTER OF SCIENCE in POLYMER CHEMISTRY

By

MUBEENA THANSEEHA

(KVAWMPC009)

Research and PG Department of Chemistry Mes Keveeyam College, Valanchery

Calicut University, Kerala



Under the Supervision of

Dr. SHIMA P. D. Assistant Professor School of Chemical Sciences Swami Anantha Theertha Campus Kannur University, Kerala





PRINCIPAL M.E.S KEVEEYAM COLLEGE VALANCHERY, PIN 676552 MALAPPURAM



KANNUR UNIVERSITY SCHOOL OF CHEMICAL SCEINCES

Swami Anantha Theertha Campus, Payyanur Edat P.O., Kannur, Kerala, India, PIN: 670 327

CERTIFICATE

This is to certify that the project entitled "Electrochemical Sensing of Ascorbic Acid Using Silver Nanoparticle Anchored Molybdenum Disulfide Nanosheets" submitted to Calicut University in partial fulfilment of the requirements for the award of the Degree of Master of Science in polymer Chemistry is a record of original work done by MUBEENA THANSEEHA (Reg.No: KVAWMPC009) from School of Chemical Sciences, Swami Anantha Theertha Campus, Kannur University under my supervision and guidance. The work presented in this dissertation has not been submitted for any other degree/diploma of this or any other university.

Place: Payyanur Date: 22 05 2020



Dr. SHIMA P. D.

Dr. SHIMA. P.D Assistant Professor Department of Chemistry (Swami Anandatheertha Campus-Payyanur Kannur University, Kerata - 670 327

SUPRAMOLECULAR BLOCK COPOLYMERISATION OF THIOFLAVIN-T CYANURIC ACID DERIVATIVES

A Dissertation Submitted to University of Calicut in Partial Fulfillment of the Requirement

for the Degree of

Master of Science in Polymer Chemistry

Submitted By

LAHAN.M

Register Number: KVAWMPC017



Research and PG Department of Chemistry MES KEVEEYAM COLLEGE, Valanchery

Malappuram- 676552

Under the supervision of

Dr. REJI VARGHESE

Associate Professor



School of Chemistry

Indian Institute of Science Education and Research

Thiruvananthapuram - 695551



May 2024





Research and PG Department of Chemistry MES KEVEEYAM COLLEGE, VALANCHERY (Re-accredited by NAAC with A+ grade) Malappuram, Kerala- 676552

CERTIFICATE

This is to certify that the project work entitled "SUPRAMOLECULAR BLOCK COPOLYMERISATION OF THIOFLAVIN-T CYANURIC ACID DERIVATIVES" which is submitted by Mr. Lahan M for the award of Degree of Master of Science in Polymer Chemistry is a record of bonafide work done by him.

Valanchery May 2024



Prof. K. M. Rukkiya Head, Department of Chemistry

Doument

Dr. SOUMINI C Assistant Professor & HOD Research and PG Department of Chemistry MES Keveeyam College, Valanchery-676552

Deciphering the Mechanism of Supramolecular Polymerization of Tetraphenyl ethylene Tethered Chiral Units

A PROJECT REPORT SUBMITTED TO CALICUT UNIVERSITY

IN PARTIAL FULFILMENT OF THE REQUIREMENTS

FOR THE DEGREE OF MASTER OF SCIENCE IN POLYMER CHEMISTRY By

SRUTHI KC [KVAWMPC015]

DEPARTMENT OF CHEMISTRY M. E. S. KEVEEYAM COLLEGE VALANCHERY,676552



WORK CARRIED OUT UNDER THE GUIDENCE OF DR. REJI VARGHESE

Associate Professor

School of Chemistry



THIRUVANANTHAPURAM

Institute of Science Education and Research (IISER) Thiruvananthapuram, Kerala Indian



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Indian Institute of Science Education and Research Thiruvananthapuram

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> Thiruvananthapuram 10-July-2024

CERTIFICATE

This is to certify that Ms. Sruthi.K.C, a student from MES KEVEEYAM COLLEGE, VALANCHERY, Malappuram, has undertaken a research internship in my research laboratory at School of Chemistry, IISER TVM from 05th March, till 5th May in 2024. The research training explores multi step organic synthesis and purification.

Dr. Reji Varghese

Associate Professor, School of Chemistry

Indian Institute of Science Education and Research Thiruvananthapuram (IISER TVM)

ONE-POT SYNTHESIS AND CHARACTERIZATION OF TETRAHYDRO-β-CARBOLINE DERIVED DISPIROHETEROCYCLES VIA [3+2] CYCLOADDITION

A Dissertation Submitted to University of Calicut in Partial Fulfillment of the Requirement for the Degree of

Master of Science in Polymer Chemistry

Submitted By

ASNA M

Register Number: KVAWMPC002



Research and PG Department of Chemistry MES KEVEEYAM COLLEGE, Valanchery Malappuram- 676552

Under the supervision of

Dr. ANI DEEPTHI

Assistant Professor



Department of Chemistry University of Kerala, Kariavattom Thiruvananthapuram- 695581

May 2024



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Research and PG Department of Chemistry MES KEVEEYAM COLLEGE, VALANCHERY (Re-accredited by NAAC with A+ grade) Malappuram, Kerala- 676552

CERTIFICATE

This is to certify that the project work entitled "ONE-POT SYNTHESIS AND CHARACTERIZATION OF TETRAHYDRO-β-CARBOLINE DERIVED DISPIROHETEROCYCLES VIA [3+2] CYCLOADDITION" which is submitted by Ms. Asna M for the award of Degree of Master of Science in Polymer Chemistry is a record of bonafide work done by her.

Valanchery

May 2024



DL. Doumini-C

Head, Department of Chemistry

Dr. SOUMINI C Assistant Professor & HOD Research and PG Department of Chemistry MES Keveevam College Valanchery-676552

PRINCIPAL M.E.S KEVEEYAM COLLEGE VALANCHERY, PIN 676552 MALAPPURAM



DESIGN AND SYNTHESIS OF PHENOLATE LIGAND FOR NITRITE REDUCTION

A Project Report Submitted to the University of Calicut in Partial Fulfilment of the Requirements for the Degree of

Master of Science Polymer Chemistry

Submitted by

JUNAINA C P

KVAWMPC008



RESEARCH AND PG DEPARTMENT OF CHEMISTRY MES KEVEEYAM COLLEGE VALANCHERY

Under the Supervision of

Dr. SUBRATA KUNDU

Associate Professor



SCHOOL OF CHEMISTRY INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH THIRUVANANTHAPURAM -695551, INDIA

JULY 2024

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Indian Institute of Science Education and Research Thiruvananthapuram (An Autonomous Institution under Ministry of Education, Government of India)

> Maruthamala PO, Vithura, Thiruvananthapuram 695551, Kerala, India Tel: +91 471 2778092, email: thiru@isertvm.ac.in https://www.fisertvm.ac.in/faculty/thiru/research_

CERTIFICATE

This is to certify that the research work contained in this project report entitled "Design and Synthesis of Phenolate Ligand for Nitrite Reduction " submitted by JUNAINA C P (KVAWMPC008) to MES KEVEEYAM COLLEGE, Valanchery from Indian Institute of Science Education and Research Thiruvananthapuram towards partial requirement of MSc Project has been carried out by her under my supervision and that it has not been submitted elsewhere for the award of any degree.

Stratt.

Thiruvananthapuram 20-07-2024

Dr. Subrata Kundu Project supervisor Associate Professor, School of Chemistry, (IISER TVM)

SYNTHESIS AND CHARACTERISATION OF BIOLOGICALLY RELEVANT BIDENTATE QUINOLINE-BASED BENZIMIDAZOLE LIGAND FOR METAL-NITRITE COMPLEXES

A Project Report Submitted to the University of Calicut in Partial Fulfillment Of the Requirements for the degree of

Masters of Science in Polymer Chemistry

Submitted By

FATHIMA HIBA T

KVAWMPC005



RESEARCH AND PG DEPARTMENT OF CHEMISTRY MES KEVEEYAM COLLEGE, VALANCHERY

Under the supervision of

Dr. SUBRATA KUNDU

Associate Professor



SCHOOL OF CHEMISTRY INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH THIRUVANANTHAPURAM -695551, INDIA JULY 2024

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Indian Institute of Science Education and Research Thiruvananthapuram (An Autonomous Institution under Ministry of Education, Government of India)

> Manuthamala PO, Vithura, Thiruvananthapuram 695551, Kerala, India Tel: +91 471 2778092, email: thirusilisertym.ac.in https://www.lisertym.ac.in/feculty/thiru/research

CERTIFICATE

This is to certify that the research work contained in this progress report entitled "Synthesis and characterisation of biologically relevant Bidentate quinolone-based benzimidazole ligand for metal-nitrite complexes" submitted by Fathima Hiba T (KVAWMPC005) from MES KEVEEYAM COLLEGE, VALANCHERY, towards partial requirement for the MSc Project is an original work carried under my supervision and has not been submitted elsewhere for the award of any degree.

SHOT

Dr. Subrata Kundu Project supervisor Associate Professor, School of Chemistry, (IISER TVM)

Thiruvananthapuram 20-07-2024

ANTIMICROBIAL AND PHOTOCATALYTIC ACTIVITY STUDIES OF GREEN SYNTHESISED ZINC OXIDE NANOPARTICLES USING ARTOCARPUS ALTILIS

Dissertation submitted to UNIVERSITY OF CALICUT In partial

fulfilment for the award of the degree of MASTER OF SCIENCE IN POLYMER CHEMISTRY

by

AMINA NIDHA K P

(Reg.No KVAWMPC001)



PG DEPARTMENT OF CHEMISTRY

MES KEVEEYAM COLLEGE

VALANCHERY

Under the guidance of

Dr.DIVYA P N

HOD and Assistant professor

Department of chemistry

GOVERNMENT ARTS AND SCIENCE COLLEGE FOR WOMEN

MALAPPURAM, 676504, Kerala









Department of chemistry

Government Arts and science College for women Malappuram,676504, Kerala

CERTIFICATE

This is to certify that the project entitled "ANTIMICNIDHA.AND PHOTOCATALYTIC ACTIVITY STUDIES OF GREEN SYNTHESISED ZINC OXIDE NANOPARTICLES USING ARTOCAROUS ALTILIS" submitted to Calicut University in partial fulfillment of the requirements for the award of the Degree of Master of Science in Polymer Chemistry is a record of original work done by AMINA NIDHA .K.P. (Reg.No: KVAWMPC001) from Department of Chemistry Government Arts and science college for women, Calicut University under my supervision and guidance. The work presented in this dissertation has not been submitted for any other degree/diploma of this or any other university.

Dr. DIVYA P N

HOD and Assistant Professor

Department of Chemistry

Govt. Arts and Science College For Women Malappuram

neparin MES Keveeyam æ College, 6765

De. Dour

2

Dr. SOUMINI C Assistant Professor & HOD Research and PG Department of Chemistry MES Keveeyam College, Valanchery-676552

Place

Date:

DEVELOPMENT AND CHARACTERIZATION OF HYDROGEL BASED ON CELLULOSE EXTRACTED FROM COIR

Project report submitted to the University of Callent

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

MASTER OF SCIENCE IN POLYMER CHEMISTRY



by

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(NAAC Accredited with 'A+' Grade)

CERTIFICATE

This is to certify that the project work entitled DEVELOPMENT AND CHARACTERIZATION OF HYDROGEL BASED ON CELLULOSE EXTRACTED FROM COIR" record carried out by SUHAILA NASRIN (Reg No: KVAVMPC015) student of MES KEVEEYAM COLLEGE VALANCHERY under my supervision and guidance during the period 2022- 2023 for the partial fulfilment of the requirement for the Master's Degree in Chemistry.

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2