

COMPUTATIONAL ANALYSIS OF METAL OXIDES USING QUANTUM ESPRESSO

Project report submitted in partial fulfilment of the
requirement for the award of the degree of
BACHELOR OF SCIENCE IN PHYSICS

Submitted by,

Abinav B Anil, Fidha Saheer M, Firas V Valappil,
Muhammed Rashid N P, Sooraj C P, Sreelakshmi K V

University registration no:

KVAVSPH030, KVAVSPH004, KVAVSPH012,
KVAVSPH034, KVAVSPH025, KVAVSPH029

Under the Supervision of

MAJEESH M

DEPARTMENT OF PHYSICS

M.E.S KEVEEYAM COLLEGE VALANCHERY



(Affiliated to University of Calicut)

2021-2024



Kavined


PRINCIPAL
M.E.S KEVEEYAM COLLEGE
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MALAPPURAM

CERTIFICATE

This is to certify that the project entitled “COMPUTATIONAL ANALYSIS OF METAL OXIDES USING QUANTUM ESPRESSO” submitted by SREELAKSHMI K V, a student of BSc Physics in MES KeVeeYam College, Valanchery, has been carried out under MAJEESH M, Assistant professor, Department of Physics MES KeVeeYam College, Valanchery, for the partial fulfilment of the requirement for the award of Bachelor of Science in Physics of the University of Calicut during 2021-2024

Place: Valanchery

Date:


26/8/24



MAJEESH M

ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS

DI ELECTRIC CONSTANT

**PROJECT SUBMITTED IN
PARTIAL FULFILLMENT OF REQUIREMENT FOR AWARD OF THE
DEGREE OF BACHELOR OF PHYSICS**

BY

ASIA SHAHANAS K

REG NO. KVAVSPH002

NAFEESATHUL MISIRIYA N

REG NO. KVAVSPH005

MOHAMMED MASHAR MP

REG NO. KVAVSPH014

MUHAMMED SHIFAN PP

REG NO. KVAVSPH017

SHAMILA SHIRIN

REG NO. KVAVSPH023

AKSHAY S

REG NO. KVAVSPH024

**UNDER THE GUIDANCE OF
PROF. MUHAMMED SHIBU K**



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**DEPARTMENT OF PHYSICS
MES KEVEEYAM COLLEGE VALANCHERY
BATCH: 2021-2024**

DEPARTMENT OF PHYSICS
MES KEVEEYEM COLLEGE, VALANCHERY
MALAPPURAM, KERALA

BONA-FIDE CERTIFICATE

This is to certify that the content of this project entitled “**DI ELECTRIC CONSTANT**” is a bona-fide work of “ASIA SHAHANAS K (KVAVSPH002), NAFEESATHUL MISIRIYA N (KVAVSPH005), MOHAMMED MASHAR MP (KVAVSPH014), MUHAMMED SHIFAAN PP (KVAVSPH017), SHAMILA SHIRIN (KVAVSPH023), AKSHAY S (KVAVSPH024)” submitted for consideration of partial fulfillment of requirement for awarding the degree of Bachelor science.

The original research was carried out by them under my supervision in the academic year 2023-24. On the basis of the declaration made by them by recommending this project for evaluation.

Place: Valanchery

Date:

Shanku
26/3/24

EXTERNAL EXAMINER

M. Shibu K
Muhammed Shibu K

(Assistant professor)

ANALYZING SURFACE TENSION VARIATION IN SOAP SOLUTIONS ACROSS VARYING CONCENTRATIONS

Project submitted in

Partial fulfilment of requirement for award of the
Degree of Bachelor Science

ADNAN (KVAVSPH009)

RANIYA (KVAVSPH021)

ARUNDHATHI CP (KVAVSPH026)

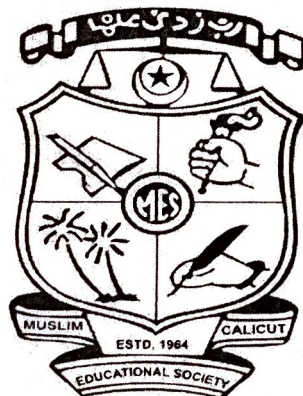
HISANA THASNEEM (KVAVSPH027)

RAEES .C (KAVASPH035)

FATHIMA SANA (KVAVSPH038)

Under the guidance of

Dr. NAVAS MP



Department of physics

MES KEVEEYAM VALANCHERY

BATCH 2021- 2024

DEPARTMENT OF PHYSICS

MES KEVEEYAM VALANCHERY, VALANCHERY

MALAPPURAM, KERALA

CERTIFICATE

This is to certify that the content of this project entitled **ANALYZING SURFACE TENSION VARIATION IN SOAP SOLUTIONS ACROSS VARYING CONCENTRATIONS** by **ADNAN.B** is the Bonafide work of him submitted for consideration partial fulfillment of requirement for award of the degree of Bachelor science.

The original research work was carried out by him under my supervision In the academic year 2023-24. On the basis of the declaration made by him by recommended this project report for evaluation.

Place: Valanchery

Date : 26 march 2024

PROJECT SUPERVISOR

Dr. NAVAS MP
ASSISTANT PROFESSOR
DEPARTMENT OF PHYSICS
MES KEVEEYAM COLLEGE
VALANCHERY

External examiner

DEPARTMENT OF PHYSICS

MES KEVEEYAM VALANCHERY, VALANCHERY

MALAPPURAM, KERALA

CERTIFICATE

This is to certify that the content of this project entitled **ANALYZING SURFACE TENSION VARIATION IN SOAP SOLUTIONS ACROSS VARYING CONCENTRATIONS** by **RANIYA.P** is the Bonafide work of him submitted for consideration partial fulfillment of requirement for award of the degree of Bachelor science.

The original research work was carried out by him under my supervision In the academic year 2023-24. On the basis of the declaration made by him by recommended this project report for evaluation.

Place: *valanchery*

Date : *26 march 2024*

PROJECT SUPERVISOR

Dr. NAVAS MP
ASSISTANT PROFESSOR
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External examiner

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CERTIFICATE

This is to certify that the content of this project entitled **ANALYZING SURFACE TENSION VARIATION IN SOAP SOLUTIONS ACROSS VARYING CONCENTRATIONS** by **ARUNDHATHI CP** is the Bonafide work of him submitted for consideration partial fulfillment of requirement for award of the degree of Bachelor science.

The original research work was carried out by him under my supervision In the academic year 2023-24. On the basis of the declaration made by him by recommended this project report for evaluation.

Place: Valanchery

Date : 26 march 2024

PROJECT SUPERVISOR

Dr. NAVAS MP
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VALANCHERY

External examiner

DEPARTMENT OF PHYSICS

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CERTIFICATE

This is to certify that the content of this project entitled **ANALYZING SURFACE TENSION VARIATION IN SOAP SOLUTIONS ACROSS VARYING CONCENTRATIONS** by **HISANA THASNEEM** is the Bonafide work of him submitted for consideration partial fulfillment of requirement for award of the degree of Bachelor science.

The original research work was carried out by him under my supervision In the academic year 2023-24. On the basis of the declaration made by him by recommended this project report for evaluation.

Place: Valanchery

Date : 26 march 2024

PROJECT SUPERVISOR



Dr. NAVAS MP
ASSISTANT PROFESSOR
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VALANCHERY

External examiner

DEPARTMENT OF PHYSICS

MES KEVEEYAM VALANCHERY, VALANCHERY

MALAPPURAM, KERALA

CERTIFICATE

This is to certify that the content of this project entitled **ANALYZING SURFACE TENSION VARIATION IN SOAP SOLUTIONS ACROSS VARYING CONCENTRATIONS** by **RAEES.C** is the Bonafide work of him submitted for consideration partial fulfillment of requirement for award of the degree of Bachelor science.

The original research work was carried out by him under my supervision In the academic year 2023-24. On the basis of the declaration made by him by recommended this project report for evaluation.

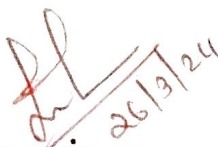
Place: Valanchery

Date : 26 march 2024

PROJECT SUPERVISOR



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ASSISTANT PROFESSOR
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VALANCHERY



26/3/24

External examiner

DEPARTMENT OF PHYSICS

MES KEVEEYAM VALANCHERY, VALANCHERY

MALAPPURAM, KERALA

CERTIFICATE

This is to certify that the content of this project entitled **ANALYZING SURFACE TENSION VARIATION IN SOAP SOLUTIONS ACROSS VARYING CONCENTRATIONS** by **FATHIMA SANA .K** is the Bonafide work of him submitted for consideration partial fulfillment of requirement for award of the degree of Bachelor science.

The original research work was carried out by him under my supervision In the academic year 2023-24. On the basis of the declaration made by him by recommended this project report for evaluation.

Place: valanchery

Date : 26 march 2024

PROJECT SUPERVISOR



Dr. NAVAS MP
ASSISTANT PROFESSOR
DEPARTMENT OF PHYSICS
MES KEVEEYAM COLLEGE
VALANCHERY

External examiner

THICKNESS VARIATION OF THIN WIRE WITH SUSPENSION OF WEIGHT: A STUDY USING LASER DIFFRACTION TECHNIQUE

PROJECT REPORT SUBMITTED IN
PARTIAL FULFILLMENT OF REQUIREMENT FOR AWARD OF THE
DEGREE OF BACHELOR OF PHYSICS

BY

ARSHA P (REG NO: KVAVSPH001)
AFTHAB P (REG NO: KVAVSPH011)
MOHAMMED RAMSAN P (REG NO: KVAVSPH015)
FASEEHA RINSHI (REG NO: KVAVSPH020)
ANSIN V (REG NO: KVAVSPH031)
AFNA M (REG NO: KVAVSPH037)

UNDER THE GUIDANCE OF
Dr.NAVAS M.P



DEPARTMENT OF PHYSICS
MES KEVEEYAM COLLEGE VALANCHERY
BATCH: 2021-2024



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DEPARTMENT OF PHYSICS
MES KEVEEYEM COLLEGE, VALANCHERY
MALAPPURAM, KERALA

CERTIFICATE

Certified that this project report "THICKNESS VARIATION OF THIN WIRE WITH SUSPENSION OF WEIGHT: A STUDY USING LASER DIFFRACTION TECHNIQUE" is a bona-fide work of "ARSHA P (REG NO: KVAVSPH001)" who carried out the project under my supervision.

PROJECT SUPERVISER



Dr.NAVAS M.P
(Assistant professor)

Place: Valanchery
Date:

EXTERNAL EXAMINER

DEPARTMENT OF PHYSICS
MES KEVEEYEM COLLEGE, VALANCHERY
MALAPPURAM, KERALA

CERTIFICATE

Certified that this project report "THICKNESS VARIATION OF THIN WIRE WITH SUSPENSION OF WEIGHT: A STUDY USING LASER DIFFRACTION TECHNIQUE" is a bona-fide work of "AFTHAB P (REG NO: KVAVSPH011)" who carried out the project under my supervision.

PROJECT SUPERVISER



Dr.NAVAS M.P
(Assistant professor)

Place: Valanchery
Date:

EXTERNAL EXAMINER



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Certified that this project report "THICKNESS VARIATION OF THIN WIRE WITH SUSPENSION OF WEIGHT: A STUDY USING LASER DIFFRACTION TECHNIQUE" is a bona-fide work of "MOHAMMED RAMSAN P (REG NO: KVAVSPH015)" who carried out the project under my supervision.

PROJECT SUPERVISER



Dr.NAVAS M.P
(Assistant professor)

Place: Valanchery
Date:

EXTERNAL EXAMINER

DEPARTMENT OF PHYSICS
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MALAPPURAM, KERALA

CERTIFICATE

Certified that this project report "THICKNESS VARIATION OF THIN WIRE WITH SUSPENSION OF WEIGHT: A STUDY USING LASER DIFFRACTION TECHNIQUE" is a bona-fide work of "FASHEEHA RINSHI (REG NO: KVAVSPH020) "who carried out the project under my supervision.

PROJECT SUPERVISER



Dr.NAVAS M.P
(Assistant professor)

Place: Valanchery
Date:

EXTERNAL EXAMINER

DEPARTMENT OF PHYSICS
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MALAPPURAM, KERALA

CERTIFICATE

Certified that this project report "THICKNESS VARIATION OF THIN WIRE WITH SUSPENSION OF WEIGHT: A STUDY USING LASER DIFFRACTION TECHNIQUE" is a bona-fide work of "ANSIN V (REG NO: KVAVSPH031)" who carried out the project under my supervision.

PROJECT SUPERVISER



Dr.NAVAS M.P
(Assistant professor)

Place: Valanchery

Date:

EXTERNAL EXAMINER

DEPARTMENT OF PHYSICS
MES KEVEEYEM COLLEGE, VALANCHERY
MALAPPURAM, KERALA

CERTIFICATE

Certified that this project report "THICKNESS VARIATION OF THIN WIRE WITH SUSPENSION OF WEIGHT: A STUDY USING LASER DIFFRACTION TECHNIQUE" is a bona-fide work of "AFNA M (REG NO: KVAVSPH037)" who carried out the project under my supervision.

PROJECT SUPERVISER



Dr.NAVAS M.P
(Assistant professor)

Place: Valanchery
Date:



PRINCIPAL
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MALAPPURAM

EXTERNAL EXAMINER

VARIATIONS IN REFRACTIVE INDEX WITH CONCENTRATIONS

**PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF
THE DEGREE OF BACHELOR OF SCIENCE, CALICUT UNIVERSITY**

BY

SALEEHA.K (KVAVSPH007)

SUHADHA THASNI. M (KVAVSPH008)

NANDANA.C (KVAVSPH0028)

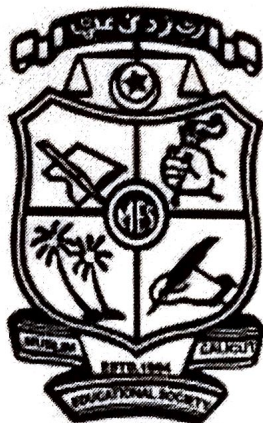
ATHITHYA.MK (KVAVSPH019)

MUHAMMED JADEER.P (KVAVSPH033)

UMMUL FASLA.P (KVAVSPH039)

UNDER THE GUIDENCE OF

Dr. BINCY IP



DEPARTMENT OF PHYSICS

CB
20/03/2024

Dr. Binay. I. P

MES KEVEEYAM COLLEGE, VALANCHERY

BATCH : 2021-2024

DEPARTMENT OF PHYSICS

MES KEVAAYAM COLLEGE, VALANCHERY

MALAPPURAM, KERALA

CIRTIIFICATE

This is to certify that SALEEHA.K, SUHADHA THASNIM, NANDANA.C, MUHAMMED JADEER, UMMUL FASLA, ATHITHYA.MK are Bonafide student of the UG programme of physics at MES KEVEEYAM COLLEGE, VALANCHERY and this project report entitled "VARIATIONS IN REFRACTIVE INDEX WITH CONCENTRATIONS" has been prepared by her for the partial fulfilment of the requirement for the award of the degree Bachelor of Science in Physics, during the academic year 2021-2024.

Place: VALANCHERY

Date: 26-03-2024


DR. Bincy.IP

EXTERNAL EXAMINER :

Studies on Variation of Young's Modulus of Teak Wood with Time

PROJECT REPORT

Submitted in

PARTIAL FULFILLMENT OF REQUIREMENT FOR AWARD OF THE
DEGREE OF BACHELOR OF PHYSICS

Under

UNIVERSITY OF CALICUT

BY

AFSIN ZUBAIR

REG NO: KVAVSPH010

FATHIMA AFNA

REG NO: KVAVSPH003

ASHIQRAHMAN V

REG NO: KVAVSPH032

HADI HUNNAS

REG NO: KVAVSPH013

RIFA P P

REG NO: KVAVSPH022

SAHLA N

REG NO: KVAVSPH006

UNDER THE GUIDANCE OF

Dr. Bincy I.P



Department of Physics
MES KEVEEYAM College Valanchery
Valanchery, Malappuram
BATCH: 2021-2024

Certificate

This is to certify that the content of this project entitled **Studies on Variation of Young's Modulus of Teak Wood with Time** by **AFSIN ZUBAIR** is the Bonafide work submitted for consideration in partial fulfillment of the requirements for the award of the degree of Bachelor of Science.

The original research work was carried out by him under my supervision in the academic year 2023-24. Based on the declaration made by the student, I recommend this project report for evaluation.

PROJECT SUPERVISOR



Dr. BINCY I.P

ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS

MES KEVEEYAM COLLEGE

VALANCHERY

Place: Valanchery

Date: 26/03/2024



External Examiner



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VALANCHERY, PIN 676552
MALAPPURAM

Certificate

This is to certify that the content of this project entitled **Studies on Variation of Young's Modulus of Teak Wood with Time** by **FATHIMA AFNA** is the Bonafide work submitted for consideration in partial fulfillment of the requirements for the award of the degree of Bachelor of Science.

The original research work was carried out by her under my supervision in the academic year 2023-24. Based on the declaration made by the student, I recommend this project report for evaluation.

PROJECT SUPERVISOR

Dr. BINCY I.P

ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS

MES KEVEEYAM COLLEGE

VALANCHERY

Place: *Valanchery*

Date: *26/03/2024*

External Examiner

Certificate

This is to certify that the content of this project entitled **Studies on Variation of Young's Modulus of Teak Wood with Time** by **ASHIQRAHMAN V** is the Bonafide work submitted for consideration in partial fulfillment of the requirements for the award of the degree of Bachelor of Science.

The original research work was carried out by him under my supervision in the academic year 2023-24. Based on the declaration made by the student, I recommend this project report for evaluation.

PROJECT SUPERVISOR

Dr. BINCY I.P

ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS

MES KEVEEYAM COLLEGE

VALANCHERY

Place: Valanchery

Date: 26/03/2024

External Examiner

Certificate

This is to certify that the content of this project entitled **Studies on Variation of Young's Modulus of Teak Wood with Time** by **HADI HUNNAS** is the Bonafide work submitted for consideration in partial fulfillment of the requirements for the award of the degree of Bachelor of Science.

The original research work was carried out by him under my supervision in the academic year 2023-24. Based on the declaration made by the student, I recommend this project report for evaluation.

PROJECT SUPERVISOR

Dr. BINCY I.P

ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS

MES KEVEEYAM COLLEGE

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Place: *Valanchery*

Date: *26/03/2024*

External Examiner



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MALAPPURAM

Certificate

This is to certify that the content of this project entitled **Studies on Variation of Young's Modulus of Teak Wood with Time** by **RIFA P P** is the Bonafide work submitted for consideration in partial fulfillment of the requirements for the award of the degree of Bachelor of Science.

The original research work was carried out by her under my supervision in the academic year 2023-24. Based on the declaration made by the student, I recommend this project report for evaluation.

PROJECT SUPERVISOR

Dr. BINCY I.P

ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS

MES KEVEEYAM COLLEGE

VALANCHERY

Place: Valanchery

Date: 26/03/2024

External Examiner

Certificate

This is to certify that the content of this project entitled **Studies on Variation of Young's Modulus of Teak Wood with Time** by **SAHLA N** is the Bonafide work submitted for consideration in partial fulfillment of the requirements for the award of the degree of Bachelor of Science.

The original research work was carried out by her under my supervision in the academic year 2023-24. Based on the declaration made by the student, I recommend this project report for evaluation.

PROJECT SUPERVISOR

Dr. BINCY I.P

ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS

MES KEVEEYAM COLLEGE

VALANCHERY

Place: Valanchery

Date: 26/03/2024

External Examiner

CERTIFICATE

This is to certify that the project entitled “COMPUTATIONAL ANALYSIS OF METAL OXIDES USING QUANTUM ESPRESSO” submitted by ABINAV B ANIL, a student of BSc Physics in MES KeVeeYam College, Valanchery, has been carried out under MAJEESH M, Assistant professor, Department of Physics MES KeVeeYam College, Valanchery, for the partial fulfilment of the requirement for the award of Bachelor of Science in Physics of the University of Calicut during 2021-2024

Place: Valanchery

Date:

MAJEESH M

ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS

CERTIFICATE

This is to certify that the project entitled “COMPUTATIONAL ANALYSIS OF METAL OXIDES USING QUANTUM ESPRESSO” submitted by FIDHA SAHEER M, a student of BSc Physics in MES KeVeeYam College, Valanchery, has been carried out under MAJEESH M, Assistant professor, Department of Physics MES KeVeeYam College, Valanchery, for the partial fulfilment of the requirement for the award of Bachelor of Science in Physics of the University of Calicut during 2021-2024

Place: Valanchery

Date:

MAJEESH M

ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS



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VALANCHERY, PIN 676552
MALAPPURAM

CERTIFICATE

This is to certify that the project entitled “COMPUTATIONAL ANALYSIS OF METAL OXIDES USING QUANTUM ESPRESSO” submitted by FIRAS V VALAPPIL, a student of BSc Physics in MES KeVeeYam College, Valanchery, has been carried out under MAJEESH M, Assistant professor, Department of Physics MES KeVeeYam College, Valanchery, for the partial fulfilment of the requirement for the award of Bachelor of Science in Physics of the University of Calicut during 2021-2024

Place: Valanchery

Date:

MAJEESH M

ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS

CERTIFICATE

This is to certify that the project entitled “COMPUTATIONAL ANALYSIS OF METAL OXIDES USING QUANTUM ESPRESSO” submitted by MUHAMMED RASHID N P, a student of BSc Physics in MES KeVeeYam College, Valanchery, has been carried out under MAJEESH M, Assistant professor, Department of Physics MES KeVeeYam College, Valanchery, for the partial fulfilment of the requirement for the award of Bachelor of Science in Physics of the University of Calicut during 2021-2024

Place: Valanchery

Date:

MAJEESH M

ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS

CERTIFICATE

This is to certify that the project entitled “COMPUTATIONAL ANALYSIS OF METAL OXIDES USING QUANTUM ESPRESSO” submitted SOORAJ C P, a student of BSc Physics in MES KeVeeYam College, Valanchery, has been carried out under MAJEESH M, Assistant professor, Department of Physics MES KeVeeYam College, Valanchery, for the partial fulfilment of the requirement for the award of Bachelor of Science in Physics of the University of Calicut during 2021-2024

Place: Valanchery

Date:

MAJEESH M

ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS

CERTIFICATE

This is to certify that the project entitled “COMPUTATIONAL ANALYSIS OF METAL OXIDES USING QUANTUM ESPRESSO” submitted by SREELAKSHMI K V, a student of BSc Physics in MES KeVeeYam College, Valanchery, has been carried out under MAJEESH M, Assistant professor, Department of Physics MES KeVeeYam College, Valanchery, for the partial fulfilment of the requirement for the award of Bachelor of Science in Physics of the University of Calicut during 2021-2024

Place: Valanchery

Date:

MAJEESH M

ASSISTANT PROFESSOR

DEPARTMENT OF PHYSICS



UNIVERSITY OF CALICUT

Abstract

General and Academic - Faculty of Science - Modified Syllabus of BSc Physics Programme under CBCSS UG Regulations 2019 with effect from 2020 Admission onwards - Implemented- Orders Issued.

G & A - IV - J

U.O.No. 6321/2020/Admn

Dated, Calicut University.P.O, 07.07.2020

- Read:-**1. U.O.No. 4368/2019/Admn dated 23.03.2019
2. U.O.No. 18084/2019/Admn Dated 28.12.2019
3. The item No.5 in the minutes of the meeting of the Board of Studies in Physics UG held on 05.03.2020
4. Remarks of the Dean,Faculty of Science dtd 08.06.2020
5. Order of the Vice Chancellor in the file even no. dtd 11.06.2020

ORDER

1. 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/PrivateRegistration w.e.f. 2019 admission, has been implemented vide paper read first above and the same has been modified vide paper read second above.
2. The meeting of the Board of Studies in Physics (UG) held on 05/06/2020 has recommended the following modifications in the I and II semester of the Syllabus of B.Sc Physics Programme in tune with the new CBCSS UG - 2019 Regulations with effect from 2020 Admission, vide paper read third above.
 - Two units in semester I should be removed. The title of the course changed to Mechanics-I.
 - The syllabus of the unit, "Waves" in the syllabus of semester II is modified with another standard text book as book of study.The title of the course changed to Mechanics-II.
3. The Dean, Faculty of Science has approved the modified syllabus of BSc Physics programme in tune with the new CBCSS UG-2019 Regulations with effect from 2020 Admission onwards, vide paper read fourth above.
4. Considering the urgency of the matter, the Vice Chancellor has accorded sanction to implement the Scheme and Syllabus of B Sc Physics Programme in accordance with the new CBCSS UG Regulations 2019, in the University with effect from 2020 Admission onwards, subject to ratification by the Academic Council.
5. The Modified Scheme and Syllabus of B Sc Physics Programme in accordance with CBCSS UG Regulations 2019, is therefore implemented in the University with effect from 2020 Admission onwards.
6. Orders are issued accordingly. (Syllabus appended).

Arsad M

Assistant Registrar

To

The Principals of all Affiliated Colleges

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Forwarded / By Order

Section Officer

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



UNIVERSITY OF CALICUT

B.Sc. PHYSICS

(CORE AND COMPLEMENTARY PROGRAMMES)

SYLLABUS & MODEL QUESTION PAPERS

w.e.f 2020 admission onwards

CBCSSUG Regulations 2020

B.Sc. DEGREE PROGRAMME (PHYSICS CORE)

COURSE STRUCTURE

Semester	Course Code	Course Title	Total hours	Hours/ Week	Credits
1	A 01	Common Course I – English	72	4	4
	A 02	Common Course II – English	90	5	3
	A 07	Common Course III – Language other than English	72	4	4
	PHY1 B01	Core course I - Mechanics I	36	2	2
		Core Course V - Practical I	36	2	*
		1 st Complementary Course I - Mathematics	72	4	3
		2 nd Complementary Course I	36	2	2
		2 nd Complementary Course Practical I	36	2	*
	EO1	Environment Studies	-	-	4**
		Total	450	25	18
2	A 03	Common Course IV – English	72	4	4
	A 04	Common Course V – English	90	5	3
	A 08	Common Course VI – Language other than English	72	4	4
	PHY2 B02	Core Course II - Mechanics II	36	2	2
		Core Course V - Practical I	36	2	*
		1 st Complementary Course II - Mathematics	72	4	3
		2 nd Complementary Course II	36	2	2
		2 nd Complementary Course Practical II	36	2	*
	E02	Disaster Management			4**
		Total	450	25	18
3	A 05	Common Course VI – English	90	5	4
	A 09	Common Course VIII - Language other than English	90	5	4
	PHY3 B03	Core Course III – Electrodynamics-I	54	3	3

		Core Course VI- Practical I	36	2	*
		1 st Complementary Course III – Mathematics	90	5	3
		2 nd Complementary Course III	54	3	2
		2 nd Complementary Course Practical III	36	2	*
	E03	Human Rights or Intellectual Property Rights or Consumer protection			4**
		Total	450	25	16
4	A 06	Common Course IX – English	90	5	4
	A 10	Common Course X - Language other than English	90	5	4
	PHY4 B04	Core Course IV - Electrodynamics II	54	3	3
	PHY4 B05	Core Course Practical V – Practical I	36	2	5
		1 st Complementary Course IV– Mathematics	90	5	3
		2 nd Complementary Course IV	54	3	2
		2 nd Complementary Course Practical IV	36	2	4
	E04	Gender studies or Gerontology			4**
		Total	450	25	25
5	PHY5 B06	Core Course VI - Computational Physics	54	3	3
	PHY5 B07	Core Course VII - Quantum Mechanics	54	3	3
	PHY5 B08	Core Course VIII - Optics	54	3	3
	PHY5 B09	Core Course IX- Electronics (Analog and Digital)	54	3	3
		Open Course – (<i>course from other streams</i>)	54	3	3
		Core Course Practical XIV - Practical II	72	4	*
		Core Course Practical XV- Practical III	72	4	*
		Core Course XVII Project/Research methodology	36	2	*
		Total	450	25	15
6	PHY6 B10	Core Course X - Thermodynamics	54	3	3
	PHY6 B11	Core Course XI -Statistical Physics, Solid State Physics, Spectroscopy and Photonics	54	3	3
	PHY6 B12	Core Course XII - Nuclear Physics and Particle Physics	54	3	3

	PHY6 B13	Core Course XIII - Relativistic Mechanics and Astrophysics	54	3	3
	PHY6 B14	Core Course XIV (Elective:EL1 / EL2 / EL3)	54	3	3
	PHY6 B15	Core Course Practical XV – Practical II	72	4	5
	PHY6 B16	Core Course Practical XVI – Practical III	72	4	5
	PHY6 B17 (P/R)	Core Course XVII Project/Research methodology Tour report	36	2	2 1
		Total	450	25	28
Total Credits					120

Tour report shall be evaluated with Practical III

*Credit for practical / project to be awarded only at the end of Semester 4 and Semester 6.

**Mandatory audit courses for the program, but not counted for the calculation of SGPA or CGPA.

Student can attain only pass (Grade P) for these courses.



Kpvined

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



POST GRADUATE DEPARTMENT OF PHYSICS
MES KEVEEYAM COLLEGE, VALANCHERY

(AFFILIATED TO THE UNIVERSITY OF CALICUT)

VALANCHERY – 676552, MALAPPURAM DISTRICT KERALA
STATE

Certificate

This is to certify that the project report entitled “EFFECT OF VARIATION IN TITANIUM DIOXIDE LAYER COMPOSITION ON THE PERFORMANCE OF DYE SENSITIZED SOLAR CELLS” is the record of bonafide work that Mr. FARIS A (REGISTER NO: KVAWMPH012), MSc student of MES KEVEEYAM COLLEGE VALANCHERY has done under the supervision and guidance of Dr. SHARAFALI A, Assistant Professor, Department of Physics, SULLAMUSSALAM SCIENCE COLLEGE, AREEKODE as part of the curriculum during the year 2022-2024. The project has not previously formed the basis for the award of any degree, diploma, associateship, fellowship or any other similar title or recognition from this or any other Institute or University.

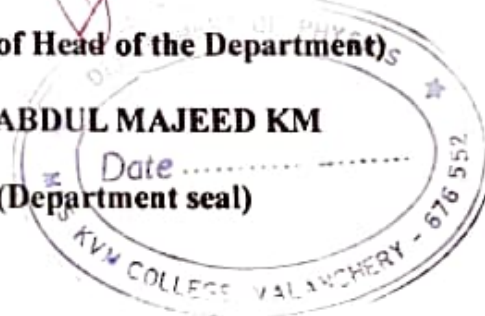
DATE: 18-07-2024.....

PLACE: VALANCHERY.....

(Signature of Head of the Department)

Mr. ABDUL MAJEED KM

Date
(Department seal)



EXTERNAL EXAMINER 1.....

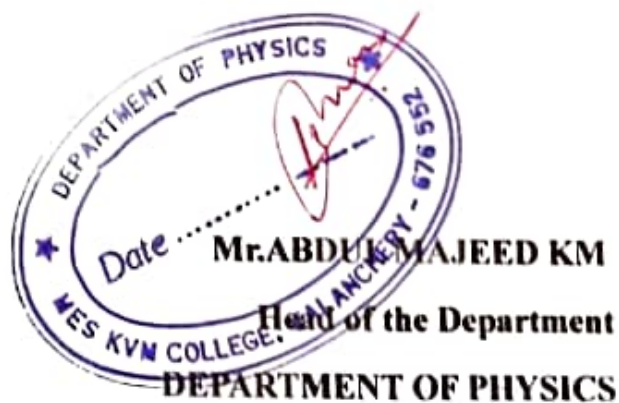
2.....

MES KEVEEYAM COLLEGE VALANCHERY, MALAPPURAM



CERTIFICATE

This is to clarify that the MSc project work entitled **"EFFECT OF CU DOPPING ON STRUCTURAL OPTICAL MORPHOLOGICAL AND ANTIBACTERIAL PROPERTIES OF NICKELFERRITE NANOPARTICLES"** is an authentic record of the work carried out by **AISWARYALAKSHMI MS (Reg no:KVAWMPH002)** in the academic year 2022-2024 for the partial fulfillment of requirements for the award of Master of Science in Physics under the University of Calicut at **MES KEVEEYAM COLLEGE VALANCHERY, MALAPPURAM**



Internal guide:

Examiner:

[Signature]
19/11/24

07-05-2024

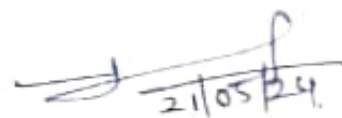
Chuloor

CERTIFICATE

This is to certify that **RIMSHI PARAVATHI**, MSc Physics student of MES KEVEEYAM COLLEGE, has done a project on the topic entitled “ **Output Calibration of Medical Linear Accelerator**” in Department of Medical Physics, MVR Cancer Centre and Research Institute under my guidance and supervision. This work has been carried out for the partial fulfilment of the requirement for the award of degree of Master of Science in Physics. It is further certified that the present work has not been submitted by her to any other university for the award of degree.




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


21/05/24

Dr.Niyas Puzhakkal

Medical Physicist

Project Supervisor

Dr. Niyas Puzhakkal

Ph.D., Dip.R.P., RSO(M)
Chief Medical Physicist & RSO
MVR Cancer Centre & Research Institute
Chuloor, Kozhikode - 673 601, Kerala

07-05-2024

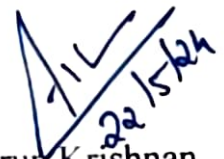
Chuloor

CERTIFICATE

This is to certify that MUHSINA VK, MSc Physics student of MES KEVEEYAM COLLEGE, has done a project on the topic entitled “ Activity measurement of iridium-192 HDR brachytherapy source” in Department of Medical Physics, MVR Cancer Centre and Research Institute under my guidance and supervision. This work has been carried out for the partial fulfilment of the requirement for the award of degree of Master of Science in Physics. It is further certified that the present work has not been submitted by her to any other university for the award of degree.



Dr. Niyas Puzhakkal
Head of Medical Physics and
Radiological Safety Officer



Mr. Arun Krishnan
Medical Physicist
Project supervisor

Dr. Niyas Puzhakkal
Ph.D., Dip.R.P., RSO-III
Chief Medical Physicist & RSO
MVR Cancer Centre & Research Institute
Chuloor, Kozhikode - 673 601, Kerala



संस्कृति मंत्रालय
MINISTRY OF
CULTURE



REGIONAL SCIENCE CENTRE & PLANETARIUM

CALICUT

(A unit of NCSM)

Certificate

This is to certify that **KADEEJA SAHIRA NT** (Reg. No. KVAWMPH005) from *MES Keveeyam College Valanchery (University of Calicut)* has done and completed a project titled **A study on Exoplanets** during **March 2024 to July 2024** towards partial fulfilment for the award of **degree of Master of Science in Physics**. The components of the project include theoretical and practical investigatory studies the chosen topic, project evaluation test and project presentation.

Jayant Ganguly

External Guide & Technical Officer

Date: 11.07.2024



CERTIFICATE

Certified that this is a bonafide report on the MSc project work entitled **"SPINEL FERRITE-STUDY ON EFFECT OF TITANIUM DOPING"** done by **RIYA MARIYAM M** under my guidance during the year 2022-2024 in partial fulfillment of requirements for the award of the Master of Science in physics by university of Calicut, Thenhippalam.

DR. SUNEESH P.U.
Asst. Professor Of Physics,
MES College Of Engineering
Kuttippuram

7/11
6/17/24
DR. SUNEESH P.U.

Assistant professor of physics

Department of physics

MES College of Engineering

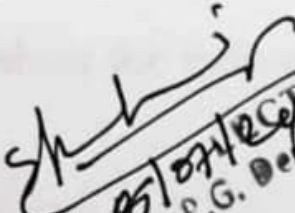
Kuttippuram-679576

Kuttippuram

Date: 6-1-24

CERTIFICATE

This is to certify that AKSHAYA VP, MSc Physics student of MES KEVEEYAM COLLEGE, has done a project on the topic entitled "**PERFORMANCE HINDERENCE OF DYE SENSITIZED SOLAR CELLS DUE TO DYE DEGRADATION**" in Sullamussalam college Areekode, affiliated to University of Calicut, under my guidance and supervision. This work has been carried out with the partial fulfillment of the requirement for the award of degree of Master of Science in physics.


05/07/2024
LECTURER
P.G. Dept. of Physics
SS College
AREAKODE - 673 630

Dr. Sharafali A

Assistant Professor

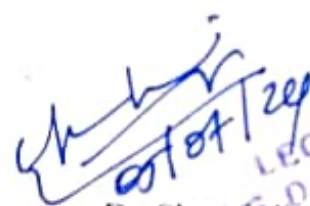
Department of

physics

Sullamussalam science college

CERTIFICATE

This is to certify that **ADEELA KK**, MSc Physics student of MES KEVEEYAM COLLEGE, has done a project on the topic entitled "**EFFECT OF ELECTROLYTE SOLVENTS ON PERFORMANCE OF DSSC**" in Department of Physics, Sullamussalam Science College, Areekode under my guidance and supervision. This work has been carried out for the partial fulfilment of the requirement for the award of degree of Master of Science in Physics. This project report has not been submitted for the award of any degree, diploma, associateship, fellowship, or any other title.



Dr. Sharada A

Assistant professor

Department of Physics

Sullamussalam Science College, Areekode

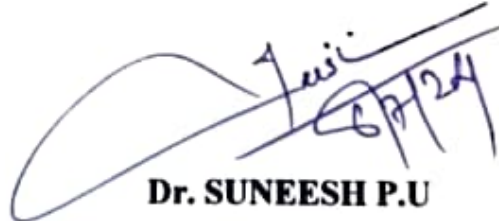




PRINCIPAL
M.E.S KEVEEYAM COLLEGE
VALANCHERY, PIN 676552
MALAPPURAM

CERTIFICATE

Certified that **Ms.RASHA MUSTHAFA** has worked on "**PREPARATION OF ZINC OXIDE NANO PARTICLES BY LEAF EXTRACT FOR ANTI MICROBIAL PROPERTIES**" under my Guidance and supervision in the Department of Physics, **M.E.S College of Engineering Kuttippuram**, in the partial fulfillment of the degree of Master of Physics, **MES KEVEEYAM College, Valanchery**, affiliated to Calicut University.



Dr. SUNEESH P.U

Dr. SUNEESH P.U
Assistant Professor Of Physics
MES College Of Engineering
Kuttippuram

ASSISTANT PROFESSOR OF PHYSICS

DEPARTMENT OF SCIENCE

M.E.S COLLEGE OF ENGINEERING

KUTTIPURAM

CERTIFICATE

Certified that this is a bonafide report on the MSc project work entitled "**EFFECT OF ANNEALATON IN THE PREPARATION OF CdO:ZnO NANOCOMPOSITE WITH AND WITHOUT ALOEVERA AS COMBUSTION MEDIUM AND ANALYSIS OF ANTIBACTERIAL PROPERTY**" done by **Mrs. NAJIYA VM** under my guidance during the year 2022-2024 in partial fulfillment of requirements for the award of the Master of Science in Physics by university of Calicut, Thenhippalam.

Dr. SUNEESH P.U
Assistant Professor Of Physics
MES College Of Engineering
Kuttippuram

Dr.SUNEESH.P.U

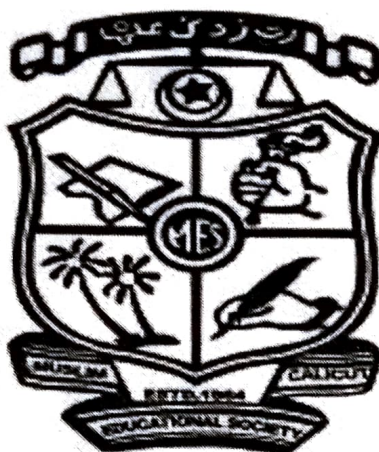
Assistant Professor Of Physics
Department Of Science
MES College Of Engineering
Kuttippuram -679582

Date: 6-7-24

Kuttippuram MES Kuttippuram

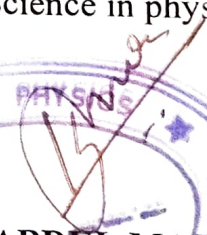
DEPARTMENT OF PHYSICS

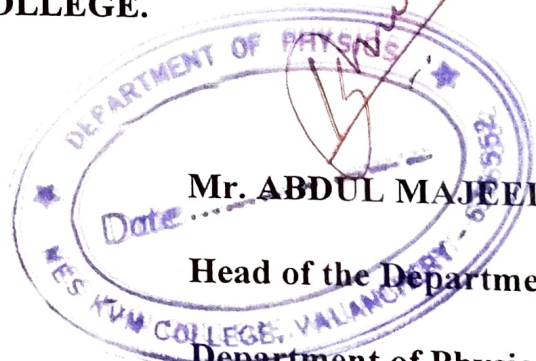
MES KEVEEYAM COLLEGE



CERTIFICATE

This is to clarify that the MSc project work entitled “**SYNTHESIS OF MANGANESE ZINC FERRITES USING SOLID STATE REACTION METHOD**” is an authentic record of the work carried out by **SNEHA P V (Reg no: KVAWMPH011)** in the academic year 2022-2024 for the partial fulfillment of requirements for the award of Master of Science in physics under the University of Calicut at **MES KEVEEYAM COLLEGE**.


Mr. ABDUL MAJEED
Date
Head of the Department
Department of Physics



External examiners:




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

SYNTHESIS OF MANGANESE ZINC FERRITES USING SOLID STATE REACTION METHOD

*A Project report submitted to the University of Calicut for the partial fulfilment of the
requirements for the award of the degree of*

MASTER OF SCIENCE IN PHYSICS

Submitted by

SNEHA P V

Reg no: KVAWMPH011



DEPARTMENT OF PHYSICS

MES KEVEEYAM COLLEGE

VALANCHERY, MALAPPURAM, KERALA

Under the supervision of

Dr. SUNEESH. P. U

Assistant Professor of Physics

DEPARTMENT OF PHYSICS

MES COLLEGE OF ENGINEERING, KUTTIPURAM

(2022-2024)

EFFECT OF CU DOPPING ON STRUCTURAL OPTICAL MORPHOLOGICAL AND ANTIBACTERIAL PROPERTIES OF NICKELFERRITE NANOPARTICLES

*A Project report submitted to the University of Calicut for the partial
fulfillment of therequirements for the award of degree*

MASTER OF SCIENCE IN PHYSICS

Submitted by AISWARYALAKSHMI MS

Reg no: KVAWMPH002

MES KEVEEYAM COLLEGE VALANCHERY,MALAPPURAM



Under the supervision of

Dr. SUNEESH. P.U

Assistant Professor of Physics

DEPARTMENT OF SCIENCE

MES COLLEGE OF ENGINEERING, KUTTIPURAM

KERALA, INDIA 679582

DEPARTMENT OF PHYSICS

EFFECT OF ANNEALATION IN THE PREPARATION OF CdO:ZnO NANOCOMPOSITES WITH AND WITHOUT ALOEVERA AS COMBUSTION MEDIUM AND ANALYSIS OF ANTIBACTERIAL PROPERTY

*A Project report submitted to the University of Calicut for the partial fulfilment of the
requirements for the award of the degree of*

MASTER OF SCIENCE IN PHYSICS

Submitted by

NAJIYA VM

Reg no: KVAWMPH007



DEPARTMENT OF PHYSICS

MES KEVEEYAM COLLEGE

Valanchery, Malappuram, Kerala 676552

Under the supervision of

Dr. SUNEESH. P. U

Assistant Professor of Physics

DEPARTMENT OF SCIENCE

MES COLLEGE OF ENGINEERING, KUTTIPPURAM

KERALA, INDIA 679582

OUTPUT CALIBRATION OF MEDICAL LINEAR ACCELERATOR

*Project Report Submitted to the University of Calicut in Partial Fulfilment of the degree of
Master of Science in Physics*

A Project report submitted by

RIMSHI PARAVATH

MSc Physics

Reg.No. KVAWMPH009

Year: 2022-2024

Under the guidance of

Dr.NIYAS PUZHAKKAL

Medical Physicist

Department of Medical Physics

MVR Cancer Centre and Research Institute Calicut
, Kerala



Department of Physics

MES KEVEEYAM COLLEGE

Valanchery , Kerala

EFFECT OF VARIATION IN TITANIUM DIOXIDE LAYER COMPOSITION ON THE PERFORMANCE OF DYE SENSITIZED SOLAR CELLS

**A PROJECT REPORT SUBMITTED TO THE UNIVERSITY OF CALICUT FOR
THE PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF
THE DEGREE OF**

MASTER OF SCIENCE IN PHYSICS



A PROJECT REPORT SUBMITTED BY

FARIS A

(REGISTER NO: KVAWMPH012)

MES KEVEEYAM COLLEGE, VALANCHERY

UNDER THE GUIDANCE OF

Dr. SHARAFALI A

(ASSISTANT PROFESSOR)

(DEPARTMENT OF PHYSICS)

(SULLAMUSSALAM SCIENCE COLLEGE, AREEKODE)



DEPARTMENT OF PHYSICS (2022-2024)

MES KEVEEYAM COLLEGE, VALANCHERY

NAAC ACCREDITED WITH A+ GRADE (3.44)

Kovind

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

**PREPARATION OF ZINC OXIDE NANO PARTICLES BY LEAF EXTRACT FOR
ANTIMICROBIAL PROPERTIES**

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

MASTER OF SCIENCE IN PHYSICS

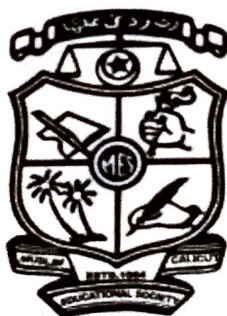
BY

RASHA MUSTHAFA

(RegNo.KVAWMPH008)

MES KEVEEYAM COLLEGE

VALANCHERY, 676552



Under the supervision of

Dr. SUNEESH P.U

ASSISTANT PROFESSOR OF PHYSICS

DEPARTMENT OF SCIENCE

M.E.S COLLEGE OF ENGINEERING, KUTTIPPURAM

KERALA, INDIA, 679582

EFFECT OF ELECTROLYTE SOLVENTS ON PERFORMANCE OF DSSC

*Project Report Submitted to the University of Calicut in Partial Fulfilment of the degree of
Master of Science in Physics*

A Project report submitted by

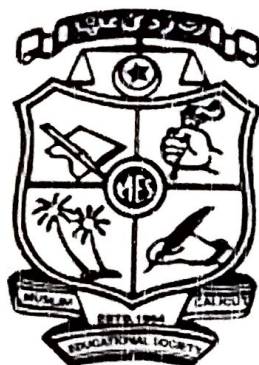
ADEELA KK

Reg.No. KVAWMPH001

Under the guidance of

Dr. SHARAFALI A

(Assistant professor, Sullamussalam Science College, Areekode)



Department of Physics

MES KEVEEYAM COLLEGE

Valanchery, Kerala

PERFORMANCE HINDERENCE OF DSSC DUETO DYE DEGRADATION

A Project Report submitted for the award of the Degree of

MASTER OF SCIENCE IN PHYSICS

(University Of Calicut)

A project report submitted by

AKSHAYA VP

Reg No: KVAWMPH003

Year:2022-2024



Department of Physics

MES KEVEEYAM COLLEGE

Valanchery, Kerala

Under the supervision of

Dr. SHARAFALI A

Assistant professor

Sullamussalam Science College

Areekode

SPINEL FERRITE-STUDY ON EFFECT OF TITANIUM DOPING

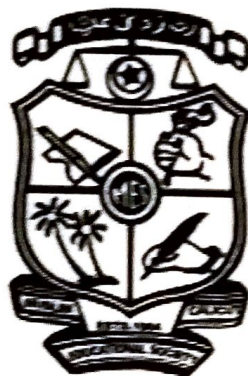
*A Project report submitted to the University of Calicut for the partial fulfillment of the
requirements for the award of the degree of*

MASTER OF SCIENCE IN PHYSICS

Submitted by

RIYA MARIYAM M

Reg no :KVAWMPH010



DEPARTMENT OF PHYSICS

MES KEVEEYAM COLLEGE

Valanchery, Malappuram, Kerala 676552

Under the supervision of

Dr. SUNEESH. P. U

Assistant Professor of Physics

DEPARTMENT OF SCIENCE

MES COLLEGE OF ENGINEERING, Kuttipuram, Kerala 679576

A STUDY ON EXOPLANETS

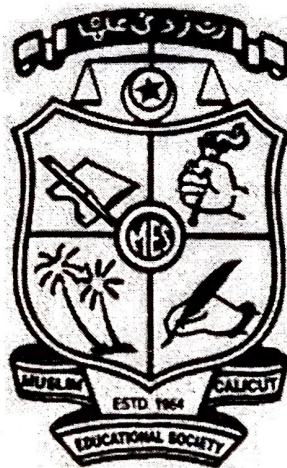
*M Sc project report submitted to the University Of Calicut in partial fulfilment of
the requirement for the degree of*

**MASTER OF SCIENCE
IN
PHYSICS
BY**

KADEEJA SAHIRA NT

Reg. No: KVAWMPH005

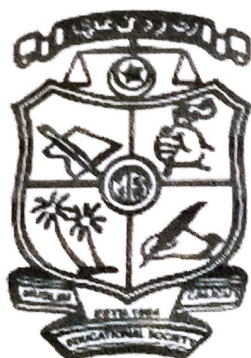
Under the guidance of
Mr. JAYANT GANGULY
Senior Technical Officer
RSC & Planetarium
Calicut, 673006



DEPARTMENT OF PHYSICS
MES KEVEEYAM COLLEGE VALANCHERY
(Affiliated with University Of Calicut)
CALICUT, 673001

ACTIVITY MEASUREMENT OF IRIDIUM-192 HDR BRACHYTHERAPY SOURCE

*Project Report Submitted to the University of Calicut in Partial Fulfilment of the
degree of Master of science in Physics*



Department of physics
MES KEVEEYAM COLLEGE
Valanchery, Kerala



MVR CCRI,

Kerala, 673601, INDIA,

4952289500,

Email: info@mvrccri.co

www.mvrcancerhospital.com

Dr. Niyas Puzhakkal
Head of Medical Physics and
Radiological Safety Officer

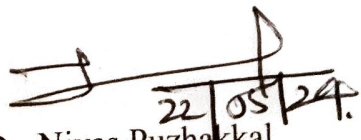
To

The Head
Department of Physics
MES Keveeyam College
Valanchery, Malappuram District

Sir,

Ms. Rimshi Paravath, M.sc Physics final year student of MES Keveeyam College Valanchery, Malappuram (Residence Address: Paravath House, Alpattakulamba, Kodur Post, Malappuram, Pin - 676504, Phone: 8086346878) is pursuing a project entitled 'Output Calibration of Medical Linear Accelerator' under my guidance as a part of her M.Sc Program. The aim of this study is to ensure the treatment is delivered accurately and precisely, following established guidelines and protocols. This project is done jointly with Mr. Akhil Anilkumar, Medical Physicist, MVR CCRI.

May 22, 2024


22/05/24
Dr. Niyas Puzhakkal
Head of Medical Physics and
Radiological Safety Officer

Dr. Niyas Puzhakkal
Ph.D., Dip.R.P., RSO-III
Chief Medical Physicist & RSO
MVR Cancer Centre & Research Institute
Chulloor, Kozhikode - 673 601, Kerala



MVR CCRI

Poolacode, Calicut

Kerala, 673601

Email: info@mvrccri.co

Dr. Niyas Puzhakkal
Head of Medical Physics and
Radiological Safety Officer

To

The Head
Department of Physics
MES Keveeyam College
Valanchery, Malappuram District

Sir,

Mrs. Muhsina VK, M.sc Physics final year student of MES Keveeyam College Valanchery, Malappuram (Residence Address: Viralikkattil House, Thathanampully Post, Palakkad, Pin - 679337, Phone: 7560954981) is pursuing a project entitled 'Activity Measurement of Ir-192 HDR Brachytherapy source' under my guidance as a part of her M.Sc Program. The aim of this study is to ensure the treatment is delivered accurately and precisely, following established guidelines and protocols. This project done jointly with Mr. Arun Krishnan, Medical Physicist, MVR CCRI

May 22, 2024



K. Vinod

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

[Signature]
22/05/24
Dr. Niyas Puzhakkal
Head of Medical Physics and
Radiological Safety Officer

Dr. Niyas Puzhakkal
Ph.D., Dip.R.P., RSO-III
Chief Medical Physicist & RSO
MVR Cancer Centre & Research Institute
Chuloor, Kozhikode - 673 601, Kerala

Dr.SharafAli A

Assistant professor

Department of Physics

Sullamussalam Science College,Areecode

To

The Head

Deoartment of physics

MES KVM College,Valanchery,Malappuram District

Sir,

Ms. ADEELA KK, Msc Physics final year student of MES KVM College Valanchery,Malappuram (ResidenceAddress:Kundukandan House,Koottil post,Malappuram District,pin – 679324,phone : 9497548190) is pursuing a project entitled 'Effect of Electrolyte Solvents on Performance of DSSC' under my guidance as a part of her MSc Program.

June 20,2024


20/06/24

Dr. SharafAli A

Assistant professor

Department of Physics

Sullamussalam Science College,Areecode

P.G. Coordinator
Dept. of Physics
S.S. College, Areecode



MES College of Engineering
Kuttippuram, Malappuram
Kerala, 679576
Email: info@mesce.ac.in

Dr. Suneesh P.U
Assistant professor of physics

To

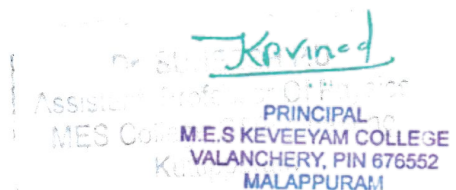
The Head
Department of Physics
MES Keveeyam College
Valanchery, Malappuram District

Sir,

Mrs. Riya Mariyam M, M.sc Physics final year student of MES Keveeyam College Valanchery, Malappuram (Residence Address: Alungal House, Ananthavoor Post, Malappuram, Pin - 676301, Phone: 7561898417) is pursuing a project entitled 'SPINEL FERRITE-STUDY ON EFFECT OF TITANIUM DOPING' under my guidance as a part of her M.Sc Program. This project aims to gain a deeper understanding of the structural, optical, and magnetic properties of Titanium- doped Magnesium Zinc ferrite samples. The obtained results contribute to the knowledge and potential applications of this material in various fields.

July 06, 2024

Dr. Suneesh P.U
Assistant professor of physics





MES College of Engineering
Kuttippuram, Malappuram
Kerala, 679582
Email: info@mesce.ac.in

Dr. Suneesh P.U
Assistant professor of physics

To

The Head
Department of Physics
MES Keveeyam College
Valanchery, Malappuram District

Sir,

Mrs. Najiya V M, M.sc Physics final year student of MES Keveeyam College Valanchery, Malappuram (Residence Address: Veluthedath Mannil House, Vilayur West Post, Palakkad, Pin - 679309, Phone: 7034763544) is pursuing a project entitled 'EFFECT OF ANNEALATION IN THE PREPARATION OF CdO:ZnO NANOCOMPOSITES WITH AND WITHOUT ALOEVERA AS COMBUSTION MEDIUM AND ANALYSIS OF ANTIBACTERIAL PROPERTY' under my guidance as a part of her M.Sc Program. This project aims to gain a deeper understanding of the structural, optical, and antibacterial properties of CdO:ZnO samples at different temperatures. The obtained results contribute to the knowledge and potential applications of this material in various fields.

July 06, 2024

Dr. Suneesh P.U
Assistant professor of physics

DR. SUNEESH P.U
Assistant Professor Of Physics
MES College Of Engineering
Kuttippuram



MES College of Engineering
Kuttippuram, Malappuram
Kerala, 679576
Email: info@mesce.ac.in

Dr. Suneesh P.U
Assistant professor of physics

To

The Head
Department of Physics
MES Keveeyam College
Valanchery, Malappuram District

Sir,

Mrs. Aiswarya Lakshmi M.S, M.sc Physics final year student of MES Keveeyam College Valanchery, Malappuram (Residence Address: Muralisadanam House, Kundurukunnu Post, Palakkad, Pin - 678583, Phone: 9061084985) is pursuing a project entitled 'EFFECT OF CU DOPPING ON STRUCTURAL OPTICAL MORPHOLOGICAL AND ANTIBACTERIAL PROPERTIES OF NICKELFERRITE NANOPARTICLES' under my guidance as a part of her M.Sc Program. This project aims to gain a deeper understanding of copper doping. The obtained results contribute to the knowledge and potential applications of this material in various fields.

July 06, 2024

Dr. Suneesh P.U
Assistant professor of physics

Dr. SUNEESH P.U
Assistant Professor Of Physics
MES College Of Engineering
Kuttippuram

Regional Science Centre & Planetarium Calicut

(A Unit of NCSM)

Jafferkhan Colony, Calicut, Kerala 673006

(O) +914952770571 URL: programmes.rscpc@gmail.com

September 10, 2023

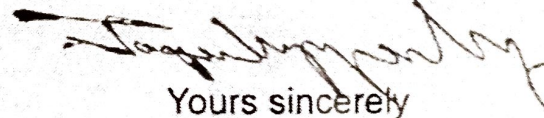
To,
The Head,
Department of Physics,
MES Keveeyam College,
Valanchery, Malappuram District

Sir,

Sub.: M Sc Project

This is to inform you that Ms. Kadeeja Sahira NT, who is a M Sc. Final Year student of MES Keveeyam College, Valanchery, Malappuram District (University Registration No. KVAWMPH005) is pursuing a project entitled 'Studies on Exo Planet' under my guidance towards partial fulfilment of the requirements for M. Sc Programme in Physics.

Thank you



Yours sincerely
Jayant Ganguly
Senior Technical Officer

Jayant Gangopadhyay
Technical Officer
Regional Science Centre
(Govt. of India)
Jafferkhan Colony
Calicut- 673 006, Kerala



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



MES College of Engineering
Kuttippuram, Malappuram
Kerala, 679576
Email: info@mesce.ac.in

Dr. Suneesh P.U
Assistant Professor of Physics

To

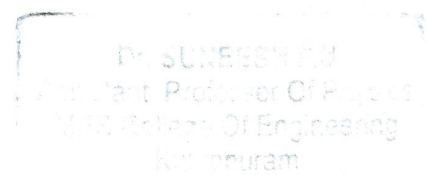
The Head
Department of Physics
MES Keveeyam College
Valanchery, Malappuram District

Sir,

Mrs. Rasha Musthafa, M.sc Physics final year student of MES Keveeyam College Valanchery, Malappuram (Residence Address: Kappattakath Ottayil House, Periyappadam, P.O B.P Angadi, Tirur-2, Pin - 676102, Phone: 8714123726) is pursuing a project entitled 'PREPARATION OF ZnO NANOPARTICLES USING LEAF EXTRACT FOR ANTIMICROBIAL PROPERTIES' under my guidance as a part of her M.Sc Program. This project aims in understanding the antimicrobial properties of ZnO prepared from leaf extract.

July 06, 2024

Dr. Suneesh P.U
Assistant Professor of Physics





MES College of Engineering
Kuttippuram, Malappuram
Kerala, 679576
Email: info@mesce.ac.in

Dr. Suneesh P.U
Assistant Professor of Physics
Department of Physics

To

The Head
Department of Physics
MES Keveeyam College
Valanchery, Malappuram District

Sir,
Miss. SNEHA P V, M.sc Physics final year student of MES Keveeyam College Valanchery, Malappuram (Residence Address: Paloth House, Moorkkanad, Marakkara Post, Malappuram, Pin - 676553, Phone: 9562019047) is pursuing a project entitled 'SYNTHESIS OF MANGANESE ZINC FERRITES USING SOLID STATE REACTION METHOD' under my guidance as a part of her M.Sc Program. This project aims to gain a deeper understanding of the structural properties of Manganese Zinc ferrite samples. The obtained results contribute to the knowledge and potential applications of this material in various fields.

July 06, 2024

Dr. Suneesh P.U
Assistant professor of physics
Department of Physics

Dr. SUNEESH P.U
Assistant Professor of Physics
MES College of Engineering
Kuttippuram

Dr.SharafAli A

Assistant professor

Department of Physics

Sullamussalam Science College,Areecode

To

The Head

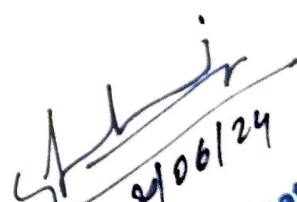
Deoartment of physics

MES KVM College,Valanchery,Malappuram District

Sir,

Ms. AKSHAYA VP, Msc Physics final year student of MES KVM College Valanchery,Malappuram (ResidenceAddressVayappulli puthan veetil House,Eravimangalam post,Malappuram,pin - 679340,phone : 9645704772) is pursuing a project entitled 'Performance Hinderence of DSSC solar cell due to dye degradation' under my guidance as a part of her MSc Program.

June 20,2024


2/06/24
Dr. SharafAli
Assistant professor
P.G. Coordinator
Dept. of Physics
S.C. College, Areecode

Department of Physics

Sullamussalam Science College,Areecode




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

Dr.SharafAli A

Assistant professor

Department of Physics

Sullamussalam Science College,Areecode

To

The Head

Deoartment of physics

MES KVM College,Valanchery,Malappuram District

Sir,

Mr. FARIS A, Msc Physics final year student of MES KVM College Valanchery,Malappuram (Residence Address : Attichirayil Imperial House,Chelakkad post,Malappuram District,pin – 679323,phone : 9061400210) is pursuing a project entitled 'Effect of Variation in the Titanium Dioxide Layer Composition on the Performance of Dye Sensitized Solar Cells' under my guidance as a part of his MSc Program.

June 20,2024



Dr. SharafAli A

Assistant Professor

Department of Physics

Sullamussalam Science College,Areecode

P.D. Coordinator
Dept. of Physics
S.S. College, Areecode



UNIVERSITY OF CALICUT

Abstract

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

G & A - IV - J

U.O.No. 5811/2021/Admn

Dated, Calicut University.P.O, 31.05.2021

*Read:-*1)U.O.No.9200/2019/Admn, Dated 12.07.2019.

2)Email , Dated 30.05.2021, from the Chairperson, Board of Studies in Physics PG.

3)Remarks of the Dean, Faculty of Science, Dated 31.05.2021.

4)Orders of the Vice Chancellor in the file of even no, Dated 31.05.2021.

ORDER

1. Scheme and Syllabus of MSc Physics Programme in accordance with CBCSS PG Regulations 2019, with effect from 2019 admission has been implemented in the University ,vide paper read (1) above.
2. The Chairman, Board of Studies in Physics PG, vide paper read (2) above, has forwarded the revised Scheme and Syllabus of M.Sc Physics Programme , prepared as per Outcome Based Education(OBE) in accordance with CBCSS PG Regulations 2019, w.e.f 2020 admission, after circulating among the members of the board , as per Chapter 3(34) of Calicut University First Statute, 1976.
3. The Scheme and Syllabus of M.Sc Physics Programme (CBCSS-PG-2019), prepared as per Outcome Based Education(OBE), has been approved by the Dean, Faculty of Science, vide paper read (3) above and by the Vice Chancellor, subject to ratification by the Academic Council, vide paper read (4) above.
4. The Scheme and Syllabus of M.Sc Physics (CBCSS) programme prepared as per Outcome Based Education (OBE) , in tune with CBCSS PG Regulations 2019, is therefore implemented with effect from 2020 Admission , under affiliated colleges of the University, subject to ratification by the Academic Council.
5. Orders are issued accordingly.(Revised syllabus appended).

Ajitha P.P

Joint Registrar

To

All affiliated Colleges

Copy to: PS to VC/PA to PVC/ PA to Registrar/PA to CE/JCE I/JCE V/JCE VIII/DoA/EX and EG Sections/GA I F/CHMK Library/Information Centres/SF/DF/FC

Forwarded / By Order

Section Officer




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



UNIVERSITY OF CALICUT

Scheme and Syllabus for

M.Sc (Physics) Programme (CBCSS-PG-2020)

for affiliated colleges (w.e.f. 2020 admission)

Programme objective :

Physics is ultimately mechanics and it furnishes the official framework. It encompasses classical mechanics, quantum mechanics, electrodynamics and statistical mechanics. These are the four pillars upon which the structure of physics is built. In spite of having large number of branches and specializations in physics, the driving source that keeps them united under a common umbrella is mechanics. Any branch of physics which has its roots in the soil of mechanics grows as physics, otherwise it becomes nonphysics. The above mentioned four branches are the foundation subjects in physics. Frontier subjects are those in which current research is going on, such as atomic physics, molecular physics, nuclear physics, plasma physics, solid state physics, materials science, astrophysics etc. Frontier subjects are always rooted in the foundation subjects. Mathematical physics is the theoretical tool and electronics is the experimental tool for exploring physics. In this programme, all the foundation subjects and few frontier subjects are offered as core courses. Because of the time constraint, few other frontier subjects are offered as elective courses. Practicals include general physics, electronics, modern physics and computational physics. A project work also has to be carried out as part of the masters programme. The programme objective is to provide quality education with a firm foundation in physics.

Programme specific outcomes:

On successful completion of the M.Sc Physics programme, students will

P.O.1 acquire a comprehensive knowledge in physics.

P.O.2 will develop a broad understanding of the physical principles of the universe.

P.O.3 acquire laboratory skills to design advanced experiments and high precision measurements.

P.O.4 be proficient in computing and interfacing techniques.

P.O.5 be empowered for critical thinking and innovation in dealing with scientific problems and experiments.

P.O.6 develop advanced laboratory techniques and instrumentation skills for a career in research.

P.O.7 develop independent research skills through projects.

P.O.8 be provided with opportunities to further their knowledge in frontier areas through elective courses.

P.O.9 be empowered for planning career in physical sciences and also in taking up jobs in other fields in the contemporary society.

P.O.10 be able to communicate effectively and participate actively in team work.

The duration of the M.Sc (Physics) programme shall be 2 years, split into 4 semesters. Each course in a semester has 4 credits (4C) with Practicals having 3 credits (3C). The total credits for the entire programme (Core & Elective) is 80. The credits for audit courses is 8. The scheme and syllabus of the programme, consisting of sections *(a) Programme structure (b) Courses and credit distribution summary (c) Courses in various semesters (d) Constitution of clusters (e) The credits and hours (f) Evaluation and Grading (g) Internal evaluation/continuous assessment (h) Pattern of question papers and (I) Detailed syllabus* are as follows.

a) PROGRAMME STRUCTURE

1. The programme shall include three types of courses : **Core courses, Elective courses and Audit Courses.**
2. Comprehensive Viva voce and Project Work / Dissertation shall be treated as Core Courses and these shall be done in the final semester.
3. Total credit for the programme shall be 80 (eighty), this describes the weightage of the course concerned and the pattern of distribution is as detailed below:
 - i. Total Credit for Core Courses (both theory & practical's) shall be 60 (sixty).
 - ii. Total Credit for Elective Course shall be 12 (twelve).
 - iii. Total Credits for Comprehensive Viva voce and Project Work combined together shall be 8 (eight) subject to a minimum of 4 (four) credit for Project Work.
4. Audit Courses: In addition to the above courses, there will be two Audit Courses (Ability Enhancement Course & Professional Competency Course) with 4 credits each. These have to be done one each in the first two semesters. The credits will not be counted for evaluating the overall SGPA & CGPA. Students have to obtain only minimum pass requirements in the Audit Courses. The details of Audit courses are given below.

Semester	Course Title	Suggested Area	Details
I	Ability Enhancement Course (AEC)	Internship / Seminar presentation / Publications / Industrial or Practical Training /Community linkage programme / Book reviews etc.	Seminar: Each student has to present a seminar on a selected topic in physics. A report has to be prepared and submitted before presenting the seminar. The abstract of the seminar has to be sent to the head of the department through the teacher in charge. Or It can be a course related to any topic from the suggested areas.
II	Professional Competency Course (PCC)	To test the skill level of students like testing the application level of different software such as Latex / Data visualization / Python/Any software relevant to the programme of study / Translations etc.	The students in their second semester will be trained on the use of Latex scientific document preparation system. (The syllabus will be part of the second semester). The latex codes for preparing the following items will be developed. 1. A question paper
			2. A review paper on a topic related to the seminar given in the first semester
			3. A power point presentation
			Evaluation of this will be based on a multiple choice written examination and an internal practical exam.
			Or
			It can be a course related to any topic from the suggested areas.

b) COURSES AND CREDIT DISTRIBUTION SUMMARY:

Semester	Courses	Teaching Hours	Credit	Total Credit
<i>I</i>	Core Courses (Theory/Practical)			Vary from 18 to 22 in each Semester (For M.sc Physics programme, since conducting practical examination in each semester is not viable, practical exams will be conducted in even semesters. Hence the total credits for the various semesters are as given under: Sem I : 16 Sem II : 22 Sem III : 16 Sem IV : 26
<i>II</i>	Core Courses (Theory/Practical)		For Core course total credit can vary from 60 to 68. For	
<i>III</i>	i. Core Courses (Theory/Practical) ii. Elective Courses (Theory/Practical)		Elective Course total credit can vary from 12 to 20. Minimum Credit for one course shall not be less than 2 (two) and shall not exceed 5 (five).	
<i>IV</i>	(i) Core Courses (Theory / Practical) including: (a) Comprehensive Viva voce (Optional) Project Work / Dissertation (ii) Elective Courses (Theory/ Practical)	Teaching hours can be fixed by the concerned BoS for various courses and shall not exceed 25 hours per week @ 5 hours per day.	The maximum credit for comprehensive Viva voce and Project Work combined together shall be 8 (eight) subject to a minimum credit of 4 (four) for Project Work.	
Total credit shall be				80

I	Audit Course I : Ability Enhancement Course (AEC)	Not coming in the normal work load	4 (Not added for SGPA / CGPA)	4
II	Audit Course II : Professional Competency Course (PCC)		4 (Not added for SGPA / CGPA)	4

c) COURSES IN VARIOUS SEMESTERS

Semester – I (16C)

(PHY1C01)	Classical Mechanics (4C)
(PHY1C02)	Mathematical Physics – I (4C)
(PHY1C03)	Electrodynamics and Plasma Physics (4C)
(PHY1C04)	Electronics (4C)
(PHY1L01)	General Physics Practical - I*
(PHY1L02)	Electronics Practical – I**
(PHY1A01)	Ability Enhancement Course (4C)

Semester – II (22C)

(PHY2C05)	Quantum Mechanics –I (4C)
(PHY2C06)	Mathematical Physics – II (4C)
(PHY2C07)	Statistical Mechanics (4C)
(PHY2C08)	Computational Physics (4C)
(PHY2L03)	General Physics Practical - II (3C)*
(PHY2L04)	Electronics Practical – II (3C)**
(PHY2A02)	Professional Competency Course (4C)

*External Practical Exam for PHY1L01 & PHY2L03 together will be conducted at the end of 2nd semester

** External Practical Exam for PHY1L02 & PHY2L04 together will be conducted at the end of 2nd semester.

Semester -III (16C)

(PHY3C09)	Quantum Mechanics – II : (4C)
(PHY3C10)	Nuclear and Particle Physics (4C)
(PHY3C11)	Solid State Physics (4C)
Elective -I (4C)	
	Project*
(PHY3L05)	Modern Physics Practical–I ^{##}

Semester -IV (26C)

(PHY4C12)	Atomic and Molecular Spectroscopy (4C)
Elective -II (4C)	

Elective -III (4C)

(PHY4P01)	Project(4C) #
(PHY4L06)	Modern Physics Practical – II (3C) ##
(PHY4L07)	Computational Physics Practical (3C)
(PHY4V01)	Comprehensive Viva voce (4C)

#Project will be started at 3rd semester and external evaluation for PHY4P01 will be conducted at the end of 4th semester.

##External Practical Exam for PHY3L05 & PHY4L06 together will be conducted at the end of 4th semester

d) CONSTITUTION OF CLUSTERS

Elective -I Cluster:

(PHY3E01)	Plasma Physics
(PHY3E02)	Advanced Quantum Mechanics
(PHY3E03)	Radiation Physics
(PHY3E04)	Digital Signal Processing
(PHY3E05)	Experimental techniques
(PHY3E06)	Elementary Astrophysics
(PHY3E07)	Introduction to Nanoscience and Technology

Elective –II Cluster:

(PHY4E08)	Advanced Nuclear Physics
(PHY4E09)	Advanced Astrophysics
(PHY4E10)	Astrophysics and Astronomical Data Analysis
(PHY4E11)	Advanced Statistical Mechanics
(PHY4E12)	Materials Science
(PHY4E13)	Electronic Instrumentation
(PHY4E14)	Laser Systems, Optical Fibres and Applications
(PHY4E15)	Communication Electronics
(PHY4E16)	Synthesis, Characterization Techniques and Applications of Nanomaterials
(PHY4E17)	Astrophysics and Positional Astronomy

Elective –III Cluster:

(PHY4E18)	Quantum Field Theory
(PHY4E19)	Chaos and Non-linear Physics
(PHY4E20)	Advanced Condensed Matter Physics
(PHY4E21)	Modern Optics
(PHY4E22)	Physics of Semiconductors
(PHY4E23)	Microprocessors, Microcontrollers and Applications
(PHY4E24)	Biophysics
(PHY4E25)	Space Physics



Kpvined

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VALANCHERY, PIN 676552
MALAPPURAM