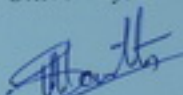




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Changanacherry-686 101  
Kottayam, Kerala, India  
Phone: 0481-2428247, Fax: 91-481-2401472

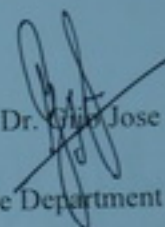
## Certificate

*This is to certify that the dissertation entitled "Synthesis of reduced Graphene Oxide from Graphene Oxide using Carbon Quantum Dots" is a bonafide record of the work done by ALEX BABU (Reg.No 22001050), under our guidance towards the partial fulfillment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.*

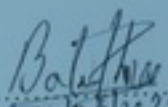
  
Dr. Sajith Mathews T

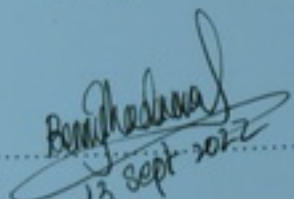
Class in charge



  
Dr. Gijo Jose  
Head of the Department

Examiners:

1)   
13/09/2022

2)   
13 sept 2022



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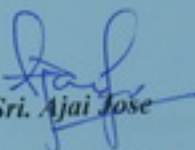
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**Department of Physics**


Changanassery-686 101  
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## *Certificate*

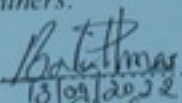
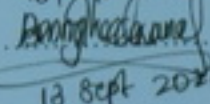
*This is to certify that the dissertation entitled "Dye Sensitized Solar Cell Using Natural Dyes from Flower Extracts" is a bonafide record of the work done by NIKHIL ANTONY (Reg No: 22001054) under our guidance towards the partial fulfillment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, Kerala, during the academic year 2020-2022.*

  
Sri. Ajai Jose  
(Teacher-in-charge)



  
Dr. Gilda Jose  
(Head of the Department)

Examiners:

1.   
13/09/2022
2.   
13 Sept 2022



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Changanacherry-686 101

Kottayam, Kerala, India

Phone: 0481-2428247, Fax: 91-481-2401472

## Certificate

This is to certify that the dissertation entitled "Synthesis of Graphene by Electrochemical Exfoliation Method and its Characterisation" is a bonafide record of the work done by Anju B Varghese (Reg No: 22001051), under our guidance towards the partial fulfillment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.

Dr. Sajith Mathews T

(Mentor)



Dr. Gijo Jose

(Head of the Department)

Examiners:

1).....  
  
13/09/2022

2).....  
  
13 Sept 2022

DEPARTMENT OF PHYSICS



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## CERTIFICATE

This is to certify that this project work entitled "Synthesis and Characterization of Magnesium Zinc Ferrite Nanoparticles using Hydrothermal method" is a bonafide record of the work done by PAULSON MATHEW (Reg. No: 22001056), under our guidance towards the partial fulfilment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.

Dr. Sajith Mathews T  
(Teacher in charge)



Dr. Gijo Jose  
(Head of the department)

Examiners:

1.

13/09/2022

2.

13 Sept 2022



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## Certificate

This is to certify that the dissertation entitled "*Synthesis of Graphene by Electrochemical Exfoliation Method and its Characterisation*" is a bonafide record of the work done by *Nimmu Thomas (Reg No: 22001055)*, under our guidance towards the partial fulfillment of the requirements for the award of the degree of *Master of Science in Physics* of the *Mahatma Gandhi University, Kottayam*, during the year *2020-2022*.

Dr. Sajith Mathews T

(Mentor)



Dr. Gijo Jose

(Head of the Department)

Examiners:

1).....

13/09/2022

2).....

13 Sept 2022

DEPARTMENT OF PHYSICS  
ST. BERCHMANS COLLEGE  
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This is to certify that this project work entitled "A Study of monolayer  $\text{MoS}_2$  on Transition Metal Oxide Substrate and the Discovery of Polaronic Trions" is a bonafide record of the work done by VRINDHA P R (Regno: 22001060), under our guidance towards the partial fulfilment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.

*S. Mathew*  
12-09-2022  
Dr. Sinu Mathew  
(project guide)

*G. Jose*  
Dr. Gijo Jose  
(HOD)

*S. Mathews T*  
Dr. Sajith Mathews T  
(Mentor)

Examiners

- 1) *B. Mathew*  
13 Sept 2022
- 2) *B. Mathew*  
13 Sept 2022





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## CERTIFICATE

Certified that the work presented in this thesis entitled "**Modelling of Radial Velocity Data of Exoplanets**" is a bonafide research work done by Ms.Mincy Liya Ignatious, under my guidance in the Department of Physics, Cochin University of Science and Technology, Kochi-682022, India.

**Dr. Gijo Jose**

Head of the Department

Department of Physics

ST.Berchmans college.



**Dr. Charles Jose**

Supervising guide

Assistant Profesor

CUSAT, Kochi

Department of Physics

1.   
13/09/2022

2.   
13 sept 2022



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Changanacherry-686 101

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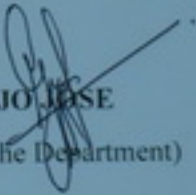
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## CERTIFICATE

This is to certify that the project work entitled "DEVELOPMENT OF A CHAOTIC OSCILLATOR BASED WEAK SIGNAL DETECTOR" is a bonafide record of the work done by AISWARYA AMBAMY (Reg No:22001049), under our guidance towards the partial fulfilment of the requirements for the award of the degree of **Master of Science in Physics** of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.

  
Dr. SAJITH MATHEWS T  
(Mentor)

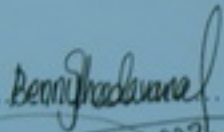


  
Dr. GIJO JOSE  
(Head of the Department)

Examiners:

1).....

2).....

  
13 Sept 2022



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## CERTIFICATE

*This is to certify that the dissertation entitled **Smart Helmets – “A Smart solution for Bike Riders”** Submitted by **SIVAPRASAD G (Reg.No.22001057)** is a bonafide record of the work based on the investigation carried out by him at **St. Berchmans College, Changanassery** under the guidance of **Prof. Justin John** in partial fulfilment of the requirement for the award of **Master of Science in Physics of Mahatma Gandhi University, Kottayam**, during the academic year **2020-2022**. The work presented in this report has not been submitted for any degree or diploma earlier.*

Dr. Sajith Mathews T  
Teacher-in-charge

Dr. Gift Jose  
Head of the Department



Examiners:

- 1...   
13/09/2022
- 2...   
13/09/2022



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## CERTIFICATE

This is to certify that the project work entitled “**RELATION BETWEEN ALZHEIMER’S DISEASE AND DIABETES MELLITUS**” is a bonafide record of the work done by **SOORAJ S**, under our guidance towards the partial fulfilment of the requirements for the award of the degree of **Master of Science in Physics** of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.

Dr. SAJITH MATHEWS T

(Mentor)



Dr. GINO JOSE

(Head of the Department)

Examiners:

1).....  
13/09/2022

2).....  
13 Sept 2022



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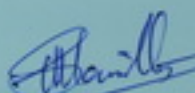
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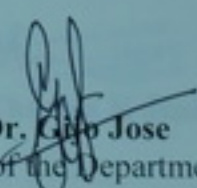
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Phone: 0481-2428247, Fax: 91-481-2401472

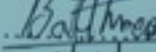
## Certificate


*This is to certify that the dissertation entitled "Study of Dust Ion Acoustic Solitary Waves in Quantum Dusty Plasma Including Positive and Negative Dust" is a bonafide record of the work done by Tharian K Jenty (Reg no: 22001059), under our guidance towards the partial fulfillment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.*

  
Dr. Sajith Mathew T  
(Mentor)

  
Dr. Gijo Jose  
(Head of the Department)

Examiners:

1)  .....  
13/09/2022

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## CERTIFICATE

*This is to certify that the dissertation entitled **Smart Helmets – “A Smart solution for Bike Riders”** Submitted by **NIKHIL K B (Reg.No.22001043)** is a bonafide record of the work based on the investigation carried out by him at **St. Berchmans College, Changanassery** under the guidance of **Prof. Justin John** in partial fulfilment of the requirement for the award of **Master of Science in Physics** of **Mahatma Gandhi University, Kottayam**, during the academic year **2020-2022**. The work presented in this report has not been submitted for any degree or diploma earlier.*

Dr. Ajai Jose  
Teacher-in-charge



Dr. Girij Jose  
Head of the Department

Examiners:

1.....

2. Dr. Prayl Mathew

13/9/22.



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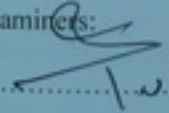
This is to certify that the project work entitled "COMPARISON OF COSMIC DATA WITH IONOSONDE DATA OVER TRIVANDRUM" is a bonafide record of the work done by NITHIN THOMAS (Reg No: 22001044) under our guidance towards the partial fulfillment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.

  
Mr. Ajai Jose  
(Mentor)

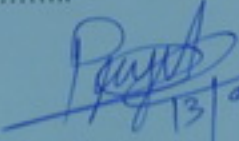


  
Dr. Gijo Jose  
(Head of the Department)

Examiners:

1.  .....

2. Dr. P. J. Mathew

  
13/9/22



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Changanacherry-686 101

Kottayam, Kerala, India

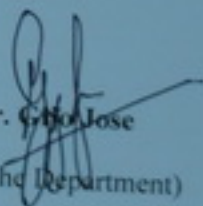
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This is to certify that the project work entitled "COMPARISON OF COSMIC DATA WITH IONOSONDE DATA OVER TRIVANDRUM" is a bonafide record of the work done by JETNA SOSA JACOB (Reg No: 22001040) under our guidance towards the partial fulfillment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.


  
Mr. Ajai Jose  
(Mentor)



  
Dr. G. B. Jose  
(Head of the Department)

Examiners:

1.  

2. Dr. P. J. Mathew   
13/9/22



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Changanacherry-686 101

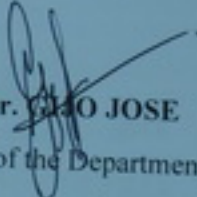
Kottayam, Kerala, India

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## CERTIFICATE

This is to certify that the project work entitled "DEVELOPMENT OF WEAK SIGNAL DETECTORS USING DUFFING AND VAN DER POL DUFFING OSCILLATORS" is a bonafide record of the work done by ANJALY SCARIA, under our guidance towards the partial fulfilment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.


  
MR. AJAL JOSE  
(Mentor)

  
Dr. GIJO JOSE  
(Head of the Department)



Examiners:

1).....  
  
13/9/2023

2).....  
  
13-09-2022



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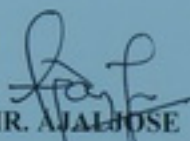
Changanacherry-686 101

Kottayam, Kerala, India

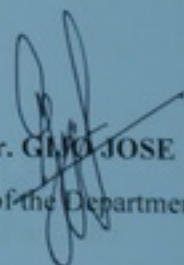
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## CERTIFICATE

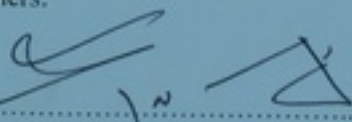
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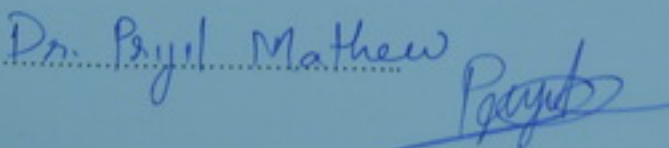
  
MR. AJAL JOSE  
(Mentor)



  
Dr. G. J. JOSE  
(Head of the Department)

Examiners:

1) 

2)   
Dr. Prayal Mathew



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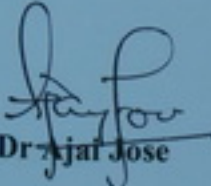
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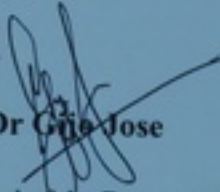
## Certificate

This is to certify that dissertation entitled **“Reduced Graphene Oxide/CoWO<sub>4</sub> nanocomposite for supercapacitors”**, is a bonafide record of the work done by **Theres Ann Tom (Reg No:22001048)** under our guidance towards the partial fulfilment of the requirements for the award of the degree of **Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the year 2020-2022**



Dr. Ajal Jose

(Mentor)

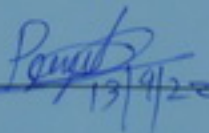


Dr. Gijo Jose

(Head of the Department)

### EXAMINERS:

1)

2) Dr. Rujil Mathew   
13/9/22



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Changanacherry-686 101

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Phone: 0481-2428247, Fax: 91-481-2401472

## Certificate

*This is to certify that the dissertation entitled "Synthesis of reduced Graphene Oxide from Graphene Oxide using Carbon Quantum Dots" is a bonafide record of the work done by ROSE JOSEPH (Reg.No 22001046), under our guidance towards the partial fulfillment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.*

Mr. Ajai Jose

Class in charge

  
Dr. Ajai Jose

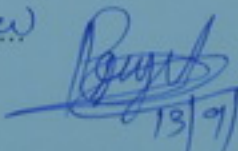
Head of the Department



Examiners:

1) .....

2) Dr. Biju Mathew

  
13/9/22

DEPARTMENT OF PHYSICS



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**CERTIFICATE**

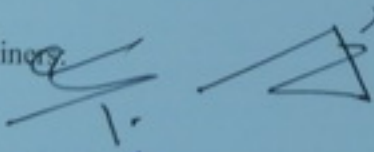
This is to certify that this project work entitled "Synthesis and Characterization of Magnesium Zinc Ferrite Nanoparticles using Hydrothermal method" is a bonafide record of the work done by **PARVATHY O NAIR** (Reg. No: 22001045), under our guidance towards the partial fulfilment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.

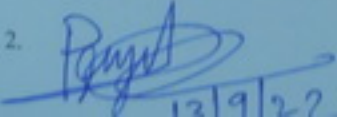
  
Mr. Ajai Jose  
(Teacher in charge)



  
Dr. G. Jose  
(Head of the department)

Examiners

1. 

2.   
13/9/22

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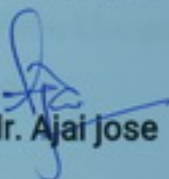


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Physics  
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## CERTIFICATE

This is to certify that the project work entitled "SYNTHESIS AND CHARACTERISATION OF HYDRATED  $WO_3$  NANOPARTICLES" is a bonafide record of the work done by **Emily Treasa Jose, Reg. No.22001037** under our guidance towards the partial fulfilment of the requirements for the award of the degree of **Master of Science in Physics** of the Mahatma Gandhi University, Kottayam, during the year **2020-2022**.

  
**Mr. Ajai Jose**  
(Mentor)




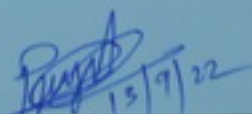
  
**Dr. Gijo Jose**  
(Head of the Department)

Examiners:

1).....

2).....

  
**Dr. Priya Mathew**

  
13/7/22



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Kottayam, Kerala, India

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## CERTIFICATE

This is to certify that the project work entitled "SYNTHESIS AND CHARACTERISATION OF HYDRATED  $WO_3$  NANOPARTICLES" is a bonafide record of the work done by Devika Rajagopal, Reg. No.22001035 under my supervision and guidance towards the partial fulfilment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.

  
Dr. Gijo Jose

Project Guide



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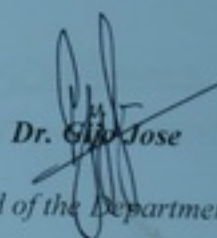
## *Certificate*

*This is to certify that the dissertation entitled "Dye Sensitized Solar Cell Using Natural Dyes From Flower Extracts" is a bonafide record of the work done by DITTY MARIA SUNNY (Reg No: 22001036) under our guidance towards the partial fulfillment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the academic year 2020-2022.*

  
Sri. Ajai Jose

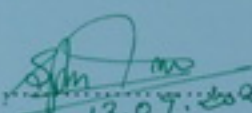
(Teacher-in-charge)

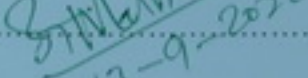


  
Dr. Gijo Jose

(Head of the Department)

Examiners:

1.....  
  
13.09.2022

2.....  
  
13-9-2022



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(Autonomous)

Department of Physics


Changanacherry-686 101

Kottayam, Kerala, India


Phone: 0481-2428247, Fax: 91-481-2401472

## CERTIFICATE


This is to certify that the project work entitled "DEVELOPMENT OF A CHAOTIC OSCILLATOR BASED WEAK SIGNAL DETECTOR" is a bonafide record of the work done by **CHRISTY T VARGHESE (Reg No:22001034)**, under our guidance towards the partial fulfilment of the requirements for the award of the degree of **Master of Science in Physics** of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.

  
MR. AJAI JOSE  
(Mentor)



  
Dr. GUDJOSE  
(Head of the Department)

Examiners:

1).....  
  
13.09.2022

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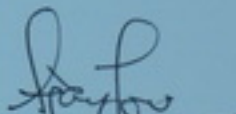
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Kottayam, Kerala, India

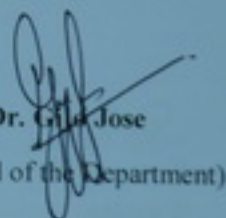
Phone: 0481-2428247, Fax: 91-481-2401472

## Certificate

This is to certify that the dissertation entitled "*Synthesis of Graphene by Electrochemical Exfoliation Method and its Characterisation*" is a bonafide record of the work done by Athira P (Reg No: 22001032), under our guidance towards the partial fulfillment of the requirements for the award of the degree of *Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.*

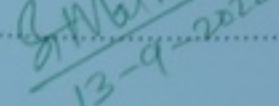
  
Ajan Jose  
(Mentor)



  
Dr. G. Jose  
(Head of the Department)

Examiners:

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13.9.2022

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13-9-2022



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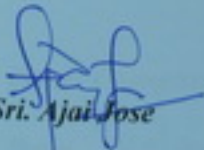
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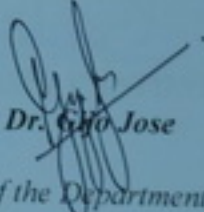
Changanassery-686 101  
Kottayam, Kerala, India

## *Certificate*

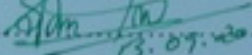
*This is to certify that the dissertation entitled "Dye Sensitized Solar Cell Using Natural Dyes from Flower Extracts" is a bonafide record of the work done by ASHLY ANTONY (Reg No: 22001031) under our guidance towards the partial fulfillment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, Kerala, during the academic year 2020-2022.*

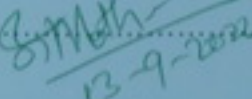
  
Sri. Ajai Jose  
(Teacher-in-charge)



  
Dr. Gijo Jose  
(Head of the Department)

Examiners:

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13-09-2022

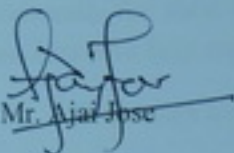
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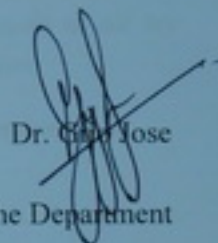
## Certificate

*This is to certify that the dissertation entitled "Synthesis of reduced Graphene Oxide from Graphene Oxide using Carbon Quantum Dots" is a bonafide record of the work done by ANIRUDH NAIR (Reg.No 22001029), under our guidance towards the partial fulfillment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.*

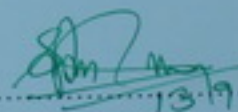
  
Mr. Ajai Jose

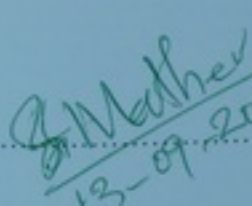
Class in charge



  
Dr. Chacko Jose  
Head of the Department

Examiners:

1)   
13-09-2022

2)   
13-09-2022



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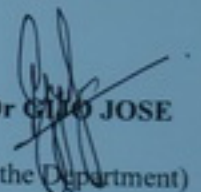
Kottayam, Kerala, India

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## CERTIFICATE

This is to certify that the project work entitled "N INVESTIGATIVE STUDY ON THE USE OF MACHINE LEARNING FOR UNDERSTANDING ALZHEIMER'S DISEASE" is a bonafide record of the work done by ANDRIA JOSEPH, under our guidance towards the partial fulfilment of the requirements for the award of the degree of **Master of Science in Physics** of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.


  
MR. AJAI JOSE  
(Mentor)

  
Dr G IJO JOSE  
(Head of the Department)



Examiners:

1)..........  
13/9/2022

2)..........



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Changanassery-686 101

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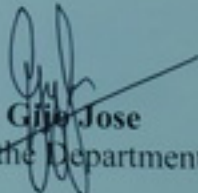
Phone: 0481-2428247, Fax: 91-481-2401472

## Certificate


*This is to certify that the dissertation entitled "Study of Dust Ion Acoustic Solitary Waves in Quantum Dusty Plasma Including Positive and Negative Dust" is a bonafide record of the work done by Amala Mathew (Reg no: 22001027), under our guidance towards the partial fulfillment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.*

  
Mr. Ajai Jose  
(Mentor)



  
Dr. Gijo Jose  
(Head of the Department)

Examiners:

1).....  
13/9/2022.....

2) .....



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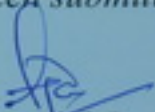
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Changanassery, Kottayam, Kerala, India-686101

## DEPARTMENT OF PHYSICS

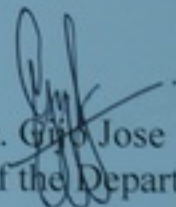


## CERTIFICATE

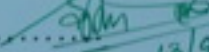
*This is to certify that the dissertation entitled **Smart Helmets – “A Smart solution for Bike Riders”** Submitted by **AARCHABHAI U R (Reg.No.22001026)** is a bonafide record of the work based on the investigation carried out by her at **St. Berchmans College, Changanassery** under the guidance of **Prof. Justin John** in partial fulfilment of the requirement for the award of **Master of Science in Physics** of **Mahatma Gandhi University, Kottayam**, during the academic year **2020-2022**. The work presented in this report has not been submitted for any degree or diploma earlier.*

  
Dr. Ajai Jose  
Teacher-in-charge



  
Dr. Gijo Jose  
Head of the Department

Examiners:

- 1.....  
13/9/2022
- 2.....

DEPARTMENT OF PHYSICS  
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This is to certify that this project work entitled "A Study of monolayer  $\text{MoS}_2$  on Transition Metal Oxide Substrate and the Discovery of Polaronic Trions" is a bonafide record of the work done by HARI PRIYA R (Regno: 22001038), under our guidance towards the partial fulfilment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.

*S. Mathew*  
13-9-2022  
Dr. Sinu Mathew  
(project guide)

*Dr. Gino Jose*  
Dr. Gino Jose  
(HOD)

A red circular stamp is placed over the signature of Dr. Gino Jose. The stamp contains the text 'DEPARTMENT OF PHYSICS' around the top inner edge and 'ST. BERCHMANS COLLEGE CHANGANASSERY' around the bottom inner edge. In the center of the stamp is a stylized logo.

*Mr. Aja Jose*  
Mr. Aja Jose  
(Mentor)

Examiners

1)

2)

*13/9/22*



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Department of Physics

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Kottayam, Kerala, India

Phone: 0481-2428247, Fax: 91-481-2401472

## CERTIFICATE

This is to certify that the project work entitled “DEVELOPMENT OF A CHAOTIC OSCILLATOR BASED WEAK SIGNAL DETECTOR” is a bonafide record of the work done by IRIN SAJI (Reg No:22001039), under our guidance towards the partial fulfilment of the requirements for the award of the degree of **Master of Science in Physics** of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.

MR. AJAI JOSE

(Mentor)



Dr. GIJO JOSE

(Head of the Department)

Examiners:

1)

2) Dr. Piyal Mathew


13/9/22

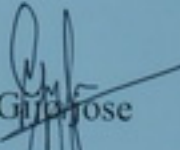
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CERTIFICATE



This is to certify that this project work entitled "A Study of monolayer  $\text{MoS}_2$  on Transition Metal Oxide Substrate and the Discovery of Polaronic Trions" is a bonafide record of the work done by NEERAJA SHAJI (Regno: 22001042), under our guidance towards the partial fulfilment of the requirements for the award of the degree of Master of Science in Physics of the Mahatma Gandhi University, Kottayam, during the year 2020-2022.

  
Dr. Siju Mathew  
(project guide)

  
Dr. Gijo Jose  
(HOD)

  
Mr. Aja Jose  
(Mentor)

Examiners

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13/9/22

