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Assistant Professor  
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## CERTIFICATE

This is to certify that the dissertation entitled "Synthesis and Characterization of Chitosan/  $MnO_2$  Nanocomposite for Reduction of Aromatic Nitrocompound" submitted to the PG and Research Department of Chemistry, Thanthai Periyar Government Arts & Science College (Autonomous), Tiruchirappalli, in partial fulfillment of the requirements for the award of **MASTER OF SCIENCE IN CHEMISTRY** for the academic year **2021-2022** is a bonafide record of the work done by **Mr. C. ARUNKUMAR (20PCH02)** under my guidance.



**மாவனாதி கந்தவேலு**  
**Head of the Department**  
கல்வியியல் பேராசிரியர் & துறைத்தலைவர்  
வேதியியல் துறை  
தந்தை பெரியார் அரசு கலை  
மத்தியம் அறிவியல் கல்லூரி (கன்னடம்)  
திருச்சிராப்பள்ளி - 620 023  
**Examiners**

1. **Dr. K. Thanikaivelan**  
**Dr. K. THANIKAVELAN**  
Asst. Professor  
Department of Chemistry  
**Periyar E.V.R. College (Autonomous)**  
**Tiruchirappalli - 620 023.**

**Research Supervisor**  
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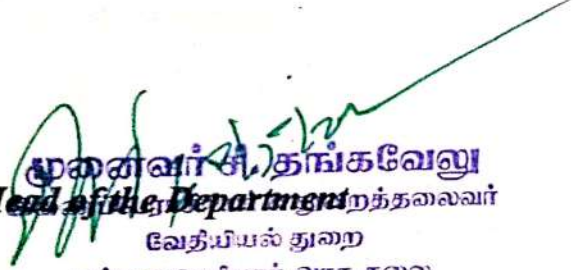
2. **Dr. R. Pagutharvalan**  
**Dr. R. PAGUTHARVALAN**  
M.Sc., M.Phil., Ph.D., MISTE., FICS.  
Assistant Professor  
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Dr. A. JOHN AMALRAJ, M.Sc., B.Ed., Ph.D.,  
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Tiruchirappalli-620 023,



### CERTIFICATE

This is to certify that the dissertation work entitled **CORROSION INHIBITION BY POLYACRYLIC ACID – Zn<sup>2+</sup> SYSTEM** the bonafied record of the original dissertation work carried out by **C. BALAMURUGAN (Reg.No. 20PCH03)** under my supervision and that it has not formed the basis for the award of any degree, diploma or fellowship.

  
**முனைவர் சி. தங்கவேலு**  
**Head of the Department**

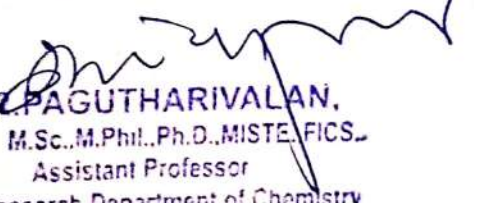
தந்தை பெரியார் அரசு கலை  
மற்றும் அறிவியல் கல்லூரி (தன்னாட்சி)  
திருச்சிராப்பள்ளி - 620 023

Submitted for the viva voce Examination held on .....

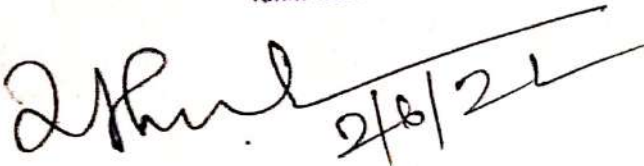
  
**Research Supervisor**

Examiners

1.

  
**Dr. R. PAGUTHARIVAN,**  
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2/6/21



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## CERTIFICATE

This is to certify that the dissertation entitled "Synthesis and Characterization of Chitosan/Fe<sub>2</sub>O<sub>3</sub> Nanocomposite for the Reduction of Aromatic Nitrocompound" submitted to the PG and Research Department of Chemistry, Thanthai Periyar Government Arts & Science College (A), Tiruchirappalli, in partial fulfillment of the requirements for the award of **MASTER OF SCIENCE IN CHEMISTRY** for the academic year 2021-2022 is a bonafide record of the work done by **Mr.K.DHAMOTHARAN (20PCH04)** under my guidance.

முனைவர் கி. தனிகசலாம்  
Head of the Department  
தனிகசலாம் துறை  
தலைவர் பெயர் அங்கு  
மற்றும் அங்கு கட்டுரை (தனிகசலாம்)  
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### Examiners

1. Dr. K. THANIKASALAM  
Assistant Professor  
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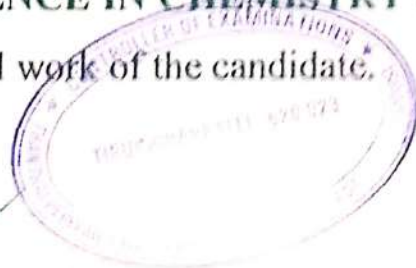
2. Dr. R. PAGUTHALAN  
M.Sc. with PH.D. in CHEMISTRY  
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**Dr. A. SHAJUDHA BEGUM M.Sc., M. Phil., Ph.D.,**  
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**THANTHAI PERIYAR GOVERNMENT**  
**ARTS AND SCIENCE COLLEGE**  
**(AUTONOMOUS)**  
**TIRUCHIRAPPALLI – 620023**

Date: \_\_\_\_\_

### CERTIFICATE

This is to certify that the project work was done under my guidance entitled **“Green Corrosion inhibition of Mild steel in HCl medium using plant Leaves extract”** submitted by **GANESH K** with **Reg.No.20PCH05** in partial fulfillment of the requirements of the **MASTER OF SCIENCE IN CHEMISTRY** during the period of **2021-2022** is the original work of the candidate.



**முனைவர் டி. தனிகவேலு**  
**Head of the Department**  
வேதியியல் துறை

தந்தை பெரியார் அரசு கலை  
மயம் பல்கலைக் கழகம்  
**Viva Voce Examination held on**  
திருச்சிரப்பள்ளி 620 023

**Project Guide**  
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**External Examiners**

**Dr. K. Thanikasalam**  
02/6/2022

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**Internal Examiners**

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M.Sc. M.Phil. Ph.D. PG & R  
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e-mail: nkguru@gmail.com

Date: 31.05.2022

CERTIFICATE

This is to certify that the project entitled "Enhancing the corrosion resistance of magnesium alloy AZ 91D in NaCl solution" the bonafide record of the original project work carried out by Mr. K. GOPINATH (Reg. No. 20PCH06) under my supervision and that it has not formed the basis for the award of any degree, diploma or fellowship.

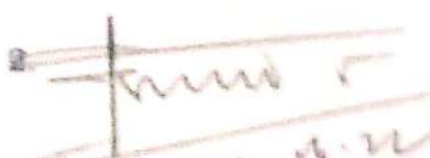
  
Signature of the Guide  
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Tiruchirappalli - 620 023

  
Signature of the Guide  
K. GOPINATH  
31/5/2022

Viva-Voce Examination held on 02.06.22.

Signature of the Examiners

1.   
(Dr. P. Pandey) 26/6/22

2.   
02.06.22

Research supervisor

Capt. Dr. P. AROCKIA SAHAYARAJ, M.Sc., Ph.D., M.A., PGDCSA.,

ASSISTANT PROFESSOR / PG AND RESEARCH DEPARTMENT OF  
CHEMISTRY, THANTHAI PERIYAR GOVERNMENT ARTS AND SCIENCE  
COLLEGE (A), TIRUCHIRAPPALLI -620 023.

CERTIFICATE

This is to certify that the project work entitled "SYNTHESIS AND CHARACTERIZATION OF NANOPARTICLE OF  $rGO/Bi_2MoO_6$  by SOL- GEL METHOD" submitted to the Department of chemistry, THANTHAI PERIYAR GOVERNMENT ARTS AND SCIENCE COLLEGE (A), TIRUCHIRAPPALLI, in partial fulfillment of the recruitment for the award of MASTER OF SCIENCE for the academic year 2020-2022 is a bonafide record of original work done by JAISANKAR M under my guidance.



Research Supervisor

**Capt. Dr. P. AROCKIA SAHAYARAJ,**  
M.Sc., M.A., PGDCSA., Ph.D.,  
ASSISTANT PROFESSOR & RESEARCH ADVISOR  
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THANTHAI PERIYAR GOVERNMENT  
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TRICHY - 620 023, TAMIL NADU

Signature of Head of the Department

**Dr. P. J. Jeyaraj**  
Assistant Professor & Research Advisor  
Department of Chemistry  
Thanthai Periyar Government Arts & Science College (Autonomous)  
Tiruchirappalli - 620 023

The Viva Voce Examination held on... **02.06.2022**

**H. Mani** **02/6/22**  
Dr. H. Mani  
Assistant Professor  
Department of Chemistry  
Periyar E.V.R. College (Autonomous)  
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**Dr. R. PAGUTHARIVARAN,**  
M.Sc., M.Phil., Ph.D., MISTE, FICL  
Assistant Professor  
Signature of the External Examiner  
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Tiruchirappalli - 620 023  
Tamil Nadu



Dr. B. R. VENKATRAMAN M.Sc., Ph.D.,  
Associate Professor,  
PG and Research Department of Chemistry  
Thanthai Periyar Government Arts and Science (Autonomous)  
Tiruchirappalli - 620 023.

Date: 21.05.2022

### CERTIFICATE

This is to certify that the Project work was done under my guidance entitled  
**"SYNTHESIS, CHARACTERIZATION AND ANTIBACTERIAL PROPERTIES OF  
TITANIUM DIOXIDE NANOPARTICLES PREPARED VIA GREEN METHOD"**  
submitted by **Mr.P.KAVIYARASAN (Reg.No.: 20PCH08)** in partial fulfillment of the  
requirements of the **MASTER OF SCIENCE IN CHEMISTRY** during the period 2020-2022  
is the original work of the candidate.



**B.R.V.** 21/05/22  
**Research Supervisor: VENKATRAMAN,**  
**M.Sc., Ph.D., PGDMM, DTM, AMNSA, FICDE, FACT, FISCA, FCS, FWRA,**  
Associate Professor,  
PG and Research Department of Chemistry,  
Thanthai Periyar Government Arts and Science College (Autonomous),  
Tiruchirappalli - 620 023.

**Head of the Department of Chemistry**  
**Dr. P. S. Srinivasan**  
Dr. P. S. Srinivasan & Associates  
Tiruchirappalli - 620 023

**Viva Voce Examination held on 02.06.2022**

**INTERNAL EXAMINER**

**EXTERNAL EXAMINER**

Research supervisor

Dr.H.BENITA SHERINE.,M.Sc., M.Phil., Ph.D

ASSISTANT PROFESSOR, DEPARTMENT OF CHEMISTRY,

THANTHAI PERIYAR GOVERNMENT ARTS AND SCIENCE COLLEGE (A),

TIRUCHIRAPPALLI -620 023.

CERTIFICATE

This is to certify that the project work entitled "ACALYPHA INDICA LEAF EXTRACT AS CORROSION INHIBITOR FOR MILD STEEL IN ACID MEDIUM" submitted to the Department of Chemistry, THANTHAI PERIYAR GOVERNMENT ARTS AND SCIENCE COLLEGE (A), TIRUCHIRAPPALLI, in partial fulfilment of the requirements for the award of MASTER OF SCIENCE for the academic year 2020-2022 is a bonafide record of original work done by M.MANIKANDAN under my guidance.

Research Supervisor

**PG & RESEARCH DEPT. OF CHEMISTRY**  
Thanthal Periyar Government  
Arts & Science College (Autonomous)  
Tiruchirappalli - 620 023

The Viva-Voce Examination held on.....

Signature of Head of the Department

முனைவர் சி. தங்கவேலு  
கிடைப்பேராசிரியர் & துறைத்தலைவர்  
வேதியியல் துறை  
தந்தை பெரியார் அரசு கலை  
மன்றம் அறிவியல் கல்லூரி (தன்னாட்சி),  
திருச்சிராப்பள்ளி - 620 023

Signature of the External Examiner

Dr. R. P. S. THARAVAN  
M.Sc., M.Phil., Ph.D  
Assistant Professor  
PG & Research Department of Chemistry  
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Pudukkottai-622 001  
Tamil Nadu





Research supervisor

Capt. Dr. P. AROCKIA SAHAYARAJ, M.Sc., Ph.D., M.A., PGDCSA.,

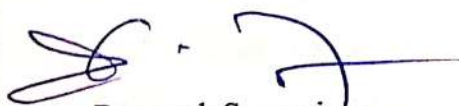
ASSISTANT PROFESSOR / PG & RESEARCH DEPARTMENT OF CHEMISTRY,

THANTHAI PERIYAR GOVERNMENT ARTS AND SCIENCE COLLEGE (A),  
TIRUCHIRAPPALLI -620 023.

**CERTIFICATE**

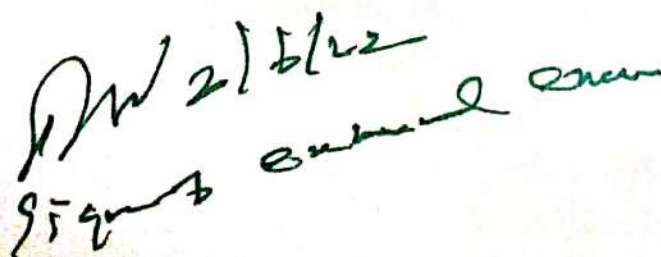
This is to certify that the project work entitled "SYNTHESIS AND CHARACTERIZATION OF NANOPARTICLE OF  $\text{Bi}_2\text{MoO}_6$  By SOL- GEL METHOD" submitted to the Department of Chemistry, THANTHAI PERIYAR GOVERNMENT ARTS AND SCIENCE COLLEGE (A), TIRUCHIRAPPALLI, in partial fulfillment of the recruitment for the award of MASTER OF SCIENCE IN CHEMISTRY for the academic year 2021-2022 is a bonafide record of original work done by N.MANJUNATHAN (20PCH10) under my guidance.

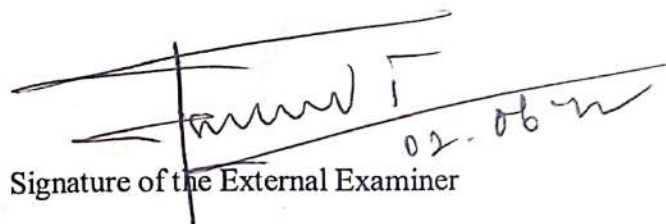


  
Research Supervisor  
**Capt. Dr. P. AROCKIA SAHAYARAJ,**  
M.Sc., M.A., PGDCSA., Ph.D.,  
ASSISTANT PROFESSOR & RESEARCH ADVISOR  
DEPARTMENT OF CHEMISTRY  
THANTHAI PERIYAR GOVERNMENT ARTS AND SCIENCE COLLEGE (A)  
TIRUCHIRAPPALLI - 620 023

  
Signature of Head of the Department  
சென்னைப் பல்கலைக் கழகம்  
தொழில்நுட்பக் கல்வித் துறை  
தமிழ்நாடு தொழில்நுட்ப அமைச்சு  
தமிழ்நாடு தொழில்நுட்ப அமைச்சு (தொழில்நுட்ப)  
தமிழ்நாடு தொழில்நுட்ப அமைச்சு - 620 023

The Viva Voce Examination held on..2..6..2022

  
Signature of the Candidate

  
Signature of the External Examiner  
02.06.22

Dr. P. SUBRAMANI M.Sc., Ph.D.,

Assistant Professor

PG and Research Department of Chemistry

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Affiliated to Bharathidasan University

Tiruchirappalli-620 023, Tamil Nadu,  
India.



## CERTIFICATE

This is to certify that the dissertation entitled **SYNTHESIS AND CHARACTERIZATION OF CHITOSAN-ZnSO<sub>4</sub> NANOCOMPOSITE FOR REDUCTION OF NITROBENZENE** submitted to the PG and Research Department of Chemistry, THANTHAI PERIYAR GOVERNMENT ARTS AND SCIENCE COLLEGE (Autonomous), Tiruchirappalli, in partial fulfillment of the requirements for the award of **MASTER OF SCIENCE IN CHEMISTRY** for the academic year 2020-2022 is a bonafide record of the work by **MOHAMEDASHIK, J (20PCH11)** under my guidance.



Head of the Department

Dr. P. Subramani  
Assistant Professor  
PG & Research Department of Chemistry  
Thanthai Periyar Government Arts and Science College  
Tiruchirappalli - 620 023

External Examiner

1. Dr. TASOKAN, N. Sc. M. Ed. B.  
Assistant Professor in Chem.  
Government Arts College  
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2. Dr. TASOKAN, N. Sc. M. Ed. B.  
Assistant Professor in Chem.  
Government Arts College  
Tiruchy - 620 023

Research Supervisor

Dr. P. SUBRAMANI  
Assistant Professor  
PG & Research Department of Chemistry  
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Research Supervisor

Dr. A. FARITHA, M.Sc., M.Phil., Ph.D., B.Ed.,  
Associate Professor, Department of Chemistry,  
Thanthai Periyar Govt. Arts & Science College (Autonomous),  
Tiruchirappalli-620 023.

## CERTIFICATE

This is to certify that the project report entitled "**BIOCIDAL PROPERTIES OF SODIUM ALGINATE DOPED TITANIUM DIOXIDE NANOPARTICLES PREPARED BY GREEN SYNTHESIS**" submitted by **C. MUNIYANDAN (20PCH12)** in partial fulfillment of the requirements of the **MASTER OF SCIENCE IN CHEMISTRY** during the period **2020-2022** is the original work of the candidate.



*A. Faritha*

Signature of the Guide

*[Signature]*  
Signature of Head of the Department

மாணியாண்டான் & துணை,  
தொழில்நுட்ப அறிவு  
தஞ்சை அரசு கலை அறிவு (தனித்தனி)  
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Viva-vice Examination held on 02.06.2022 Signature of the External Examiner

1. *[Signature]*  
Dr. T. ASOKAN, M.Sc., M.Ed., M.Phil., Ph.D.  
Assistant Professor in Chemistry  
Government Arts College  
Trichy - 620 022  
2. *[Signature]*  
2/6/22

**Dr. B. R. VENKATRAMAN M.Sc., Ph.D.,**  
Associate Professor  
PG & Research Department of Chemistry  
Thanthai Periyar Government Arts and Science College (Autonomous)  
Tiruchirappalli - 620 023.

Date: 31-5-22

### CERTIFICATE

This is to certify that the Project work was done under my guidance entitled  
**"SYNTHESIS, CHARACTERIZATION AND ANTIBACTERIAL PROPERTIES OF  
CHITOSAN DOPED TITANIUM DIOXIDE NANOPARTICLES PREPARED VIA  
GREEN METHOD"** submitted by **Mr.A.RAMAN (Reg.No.: 20PCH13)** in partial  
fulfillment of the requirements of the **MASTER OF SCIENCE IN CHEMISTRY** during the  
period 2020-2022 is the original work of the candidate.



**B. R. Venkatesh**  
Research Supervisor  
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**Head of the Department of Chemistry**  
**முனைவர் சி. தங்கவேலு**  
கலைப்பேராசிரியர் & துறைத்தலைவர்  
வேதியியல் துறை  
தந்தை பெரியார் அரசு கலை  
மன்றம் அறிவியல் கல்லூரி (தன்னாட்சி)  
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Viva Voce Examination held on ...2-6-22.....

INTERNAL EXAMINER

EXTERNAL EXAMINER

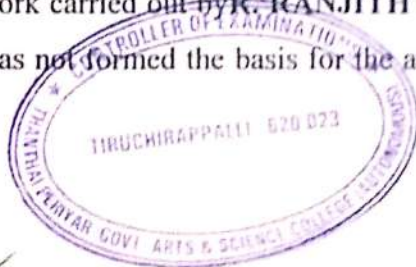


Dr. K. THANIKASALAM, M.Sc., Ph.D.  
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SCIENCE COLLEGE (Autonomous) Tiruchirappalli.  
620 023



### CERTIFICATE

This is to certify that project work entitled "A STUDY ON BINDING ENERGY CALCULATIONS OF HEPTYLACETATE AND CIS-ALPHA-BERGAMOTENE WITH 6M0J PROTEIN" is the bonafide record of the original project work carried out by R. RANJITH KUMAR (20PCH14) under my supervision and that it has not formed the basis for the award of any degree, diploma or fellowship.



Head of the Department

முனைவர் கி. தனிகசலம்  
தொழில்நுட்ப அறிவு & அறிவியல்  
தொழில்நுட்ப அறிவு  
தொழில்நுட்ப அறிவு  
தொழில்நுட்ப அறிவு (தொழில்நுட்ப)  
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Examiner

Research Supervisor

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1. Dr. R. PAGUTHARIVAN.  
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Assistant Professor  
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2. Dr. K. THANIKASALAM  
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**Dr.C.THANGAVELU, M.Sc., M.Phil., Ph.D.,**  
Associate Professor & HOD  
Post Graduate & Research Department of Chemistry  
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Affiliated to Bharathidasan University  
Tiruchirappalli-620 023, Tamil Nadu.



## CERTIFICATE

This is to certify that the dissertation entitled **"STUDY OF CONTACT ANGLE, DETERMINATION FROM SURFACE TENSION MEASUREMENTS BY LOW COST EQUIPMENTS USING GREEN MATERIALS"** submitted to the Post Graduate and Research Department of Chemistry, Thanthai Periyar Government Arts and Science College (Autonomous), Tiruchirappalli, in partial fulfillment of the requirements for the award of MASTER OF SCIENCE IN CHEMISTRY for the academic year 2021-2022 is a bonafide record of the work done by **Mr. A. SAHAYA RAMESH BABU (20PCH15)** under my guidance.

*[Signature]*  
**Head of the Department**

**தங்கவேலு சி. தங்கவேலு**  
தேவாரப்பேட்டை கிளர் & துறைத்தலைவர்  
வேதியியல் துறை  
தந்தை பெரியார் அரசு கலை  
மத்திய அறிவியல் கல்லூரி (தனிமனித)  
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**Research Supervisor**

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தந்தை பெரியார் அரசு கலை  
மத்திய அறிவியல் கல்லூரி (தனிமனித)  
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Submitted for the Viva Voce Examination held on 02/06/22

*[Signature]*  
**External Examiner**

02.6.22

*[Signature]*  
**Internal Examiner**

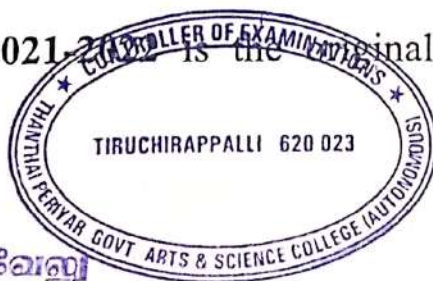


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PG & RESEARCH DEPARTMENT OF CHEMISTRY  
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(AUTONOMOUS)  
TIRUCHIRAPPALLI – 620023

Date: 02.06.2022

### CERTIFICATE

This is to certify that the project work was done under my guidance entitled “**Determination of the Relationship between surface tension and contact angle using eco-friendly green materials-A low cost approach**” submitted by SEENU.P with Reg.No.20PCH16 in partial fulfillment of the requirements of the MASTER OF SCIENCE IN CHEMISTRY during the period of 2021-2022 is the original work of the candidate.



முனைவர் சி. தங்கவேலு  
இவையப்பாசிரியர் & துறைத்தலைவர்  
Head of the Department  
தந்தை பெரியார் அரசு கலை  
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முனைவர் சி. தங்கவே  
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Project Guide  
தந்தை பெரியார் அரசு கலை  
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External Examiners

Internal Examiners

**Dr. P. PANDIAN, M.Sc., M.Phil., Ph.D.**

ASSOCIATE PROFESSOR OF CHEMISTRY

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TIRUCHIRAPPALLI - 620 023



**CERTIFICATE**

30-5-2022

This is to certify that the Dissertation entitled "ADSORPTION OF METHYLENE BLUE DYE BY *PHOENIX DACTYLIFERA*" is submitted by M.R. SUBHASH (Reg. No: 20PCH17) in partial fulfillment of the requirements for the award of degree of MASTER OF SCIENCE IN CHEMISTRY to the THANTHAI PERIYAR GOVERNMENT ARTS & SCIENCE COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI - 620 023 is a bonafide record of work done by him under my guidance during the period of study 2021-2022.

SIGNATURE OF THE CANDIDATE

*M.R. Subhash*



SIGNATURE OF THE GUIDE

**Dr. P. PANDIAN, M.Sc., M.Phil., Ph.D.**

Associate Professor

PG and Research Dept. of Chemistry

Thanthai Periyar Government

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Tiruchirappalli - 620 023.

SIGNATURE OF THE HOD

தன்தாய் பரியார் அரசு கலை

மற்றும் அறிவியல் கல்லூரி (தன்னாட்சி)

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Submitted for the Viva - Voce Examination held on ... 02.06.2022.

Internal Examiner

*[Signature]*  
7/2/6/22

External Examiner

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02-06-22





**THANTHAI PERIYAR GOVERNMENT ARTS  
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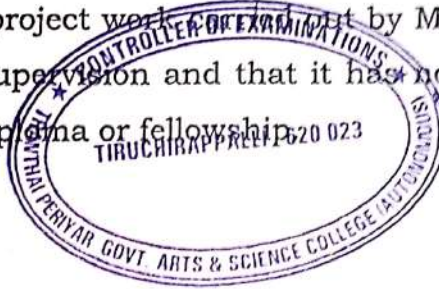
Mobile: 94863 43166

e-mail: nkguru@gmail.com

Date: 31.05.2022

**CERTIFICATE**

This is to certify that the project entitled "**Synthesis of a green inhibitor and its inhibition behavior on AZ 91D Magnesium alloy**" the bonafide Record of the original project work carried out by Miss. **T. CHITHRA** (Reg. No. 20PCH19) under my supervision and that it has not formed the basis for the award of any degree, diploma or fellowship.



Signature of HOD

**முனைவர் சி. தங்கவேலு**

கிளைப்பேராசிரியர் & துறைத்தலைவர்

வேதியியல் துறை

தந்தை பெரியார் அரசு கலை

மன்றம் அறிவியல் கல்லூரி (தன்னாட்சி)

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Viva-Voce Examination held on

21/6/22

31.5.2022  
Signature of the Guide

Signature of the Examiners

1.

02.06.22

2.

(Dr. P. Parthiban)  
21/6/22

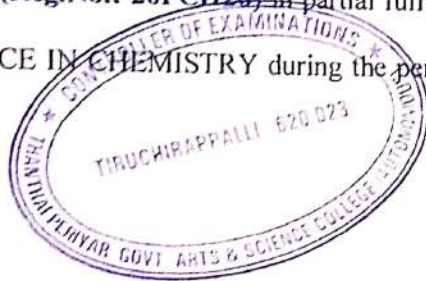


**Dr.T.VIMALARANI, M.Sc., M.Phil., B.Ed., Ph.D**  
Assistant Professor  
PG and Research Department of Chemistry  
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Tiruchirappalli - 620 023.

Date:

### CERTIFICATE

This is to certify that the Project work was done under my guidance entitled  
**"STRUCTURAL, MORPHOLOGICAL, OPTICAL AND ANTIBACTERIAL  
ACTIVITY OF CHITOSAN DOPED TIN DIOXIDE NANOPARTICLES "** submitted  
by **Miss.R.ISHWARIYA (Reg.No.: 20PCH20)** in partial fulfillment of the requirements of  
the **MASTER OF SCIENCE IN CHEMISTRY** during the period 2020-2022 is the original  
work of the candidate.



**T. Vimalarani**  
Research Supervisor  
**PG & RESEARCH DEPT. OF CHEMISTRY**  
Thanthai Periyar Government  
Arts & Science College (Autonomous)  
Tiruchirappalli - 620 023

Viva Voce Examination held on 21/05/2022

**Head of the Department of Chemistry**  
தேவநிபேரையார் அரசு அறிவு  
பெருக்கள அறிவு  
தமிழ்நாடு அரசு  
மத்திய அறிவு அறிவு (அறிவு)  
தேவநிபேரையார் - 620 023

**Dr. T. Vimalarani**  
INTERNAL EXAMINER  
**Dr. T. VIMALARANI**

**EXTERNAL EXAMINER**  
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M.Sc., M.Phil., Ph.D., MISTE., FICS.  
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Research Supervisor

Dr. A. FARITHA, M.Sc., M.Phil., B.Ed., Ph.D.,  
Associate Professor, Department of Chemistry,  
Thanthai Periyar Govt. Arts & Science College (Autonomous),  
Tiruchirappalli-620 023.

### CERTIFICATE

This is to certify that the dissertation entitled "BIOCIDAL PROPERTIES OF TIN DIOXIDE NANOPARTICLES PREPARED BY GREEN SYNTHESIS" submitted by K. JANANI(20PCH21) in partial fulfillment of the requirements of the MASTER OF SCIENCE IN CHEMISTRY during the period 2020-2022 is the original work of the candidate.



*A. Faritha*

Signature of the Guide

*[Signature]*  
Signature of Head of the Department

மாணவியர் சி. தங்கவேலு  
கிளைப்பேராசிரியர் & துறைத்தலைவர்  
வேதியியல் துறை  
தந்தை பெரியார் அரசு கலை  
மற்றும் அறிவியல் கல்லூரி (தனித்துவம்)  
திருச்சிரப்பள்ளி 620 023

Viva-vice Examination held on.....02/6/22..... Signature of the External Examiner

*[Signature]*  
02/6/22

Dr. K. THANGASALAM

Associate Professor

Department of Chemistry

Periyar E.V.R. College (Autonomous)  
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Dr. R. PAGUTHARIVANAN.

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COLLEGE (Autonomous)

TIRUCHIRAPPALLI – 620 023



**CERTIFICATE**

30/5/22

This is to certify that the Dissertation entitled “**REMOVAL OF MALACHITE GREEN DYE ONTO ACTIVATED PHOENIX DACTYLIFERA SEEDS**” is submitted by **V.P.JOY PRICILLA (Reg. No: 20PCH22)** in partial fulfillment of the requirements for the award of degree of **MASTER OF SCIENCE IN CHEMISTRY** to the **THANTHAI PERIYAR GOVERNMENT ARTS & SCIENCE COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI – 620 023** is controlled by work done by her under my guidance during the period of study 2020-2022.

V.P. Joy Pricilla  
SIGNATURE OF THE CANDIDATE



Dr. P. Pandian, M.Sc., M.Phil., Ph.D.  
Associate Professor  
PG and Research Dept. of Chemistry  
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Tiruchirappalli - 620 023.

SIGNATURE OF THE HOD  
கிடைப்பேராசிரியர் & துறைத்தலைவர்  
வேதியியல் துறை  
தந்தை பெரியார் அரசு கலை  
மற்றும் அறிவியல் கல்லூரி (தன்னாட்சி)  
Tiruchirappalli - 620 023.

Submitted for the Viva – Voce Examination held on 02.06.2022.

Internal Examiner  
2/6/22

External Examiner  
02.06.22



**Dr.T.VIMALARANI, M.Sc., M.Phil., B.Ed., Ph.D**

Assistant Professor

PG & Research Department of Chemistry

Thanthai Periyar Government Arts and Science College (Autonomous)

TIRUCHIRAPPALLI - 620 023

Date:

### CERTIFICATE

This is to certify that the Project work was done under my guidance entitled  
**"GREEN SYNTHESIS, CHARACTERIZATION AND ANTIBACTERIAL  
ACTIVITY OF SODIUM ALGINATE DOPED TIN DIOXIDE NANOPARTICLES "**  
submitted by **Miss.R.RAJARAJESWARI (Reg.No.: 20PCH23)** in partial fulfillment of the  
requirements of the MASTER OF SCIENCE DEGREE in CHEMISTRY during the period 2020-2022  
is the original work of the candidate.



**T. Vimalarani**  
31/05/2022  
Research Supervisor  
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**Dr. P. Ananthapavan**  
02/06/2022  
Head of the Department of Chemistry  
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Viva Voce Examination held on .....

**Dr. T. Vimalarani**  
02/06/2022  
INTERNAL EXAMINER  
**Dr-T. VIMALARANI**

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**Dr. P. SUBRAMANI** M.Sc., Ph. D

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Affiliated to Bharathidasan University,  
Tiruchirappalli-620 023,  
Tamil Nadu, India.



## CERTIFICATE

This is to certify that the dissertation entitled "SYNTHESIS AND CHARACTERISATION OF CHITOSAN-TiO<sub>2</sub> NANOCOMPOSITE FOR REDUCTION OF NITROBENZENE" submitted to the PG and Research Department of Chemistry, THANTHAI PERIYAR GOVERNMENT ARTS AND SCIENCE COLLEGE (Autonomous), Tiruchirappalli, in partial fulfillment of the requirements for the award of **MASTER OF SCIENCE IN CHEMISTRY** for the academic year 2020-2022 is a bonafide record of the work done by **Ms. S. SELVA ANJANTHI (20PCH24)** under my guidance.



*[Signature]*  
Head of the Department

HEAD OF THE DEPARTMENT  
PG & RESEARCH DEPT OF CHEMISTRY  
Thanthai Periyar Government Arts & Science College (Autonomous)  
Tiruchirappalli - 620 023

*[Signature]*  
Research Supervisor

Assistant Professor  
PG & Research Dept of Chemistry  
THANTHAI PERIYAR GOVERNMENT ARTS & SCIENCE COLLEGE  
Tiruchirappalli - 620 023

Examiner

1.

*[Signature]*  
21.6.22

2.

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02.06.22



**Dr. C. PRAGATHIESWARAN**

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## CERTIFICATE

This is to certify that the dissertation entitled "Synthesis and Characterization of Chitosan/Ag Nanocomposite for the Reduction of Aromatic Nitrocompound " submitted to the Post Graduate and Research Department of Chemistry, Thanthai Periyar Government Arts & Science College (Autonomous), Tiruchirappalli, in partial fulfillment of the requirements for the award of **MASTER OF SCIENCE IN CHEMISTRY** for the academic year **2021-2022** is a bonafide record of the work done by **Ms. K. VANITHA (20PCH25)** under my guidance.



**முனைவர் சி. தங்கவேலு**  
**Head of the Department** & துறைத்தலைவர்  
வேதியியல் துறை  
தந்தை பெரியார் அரசு கலை  
மன்றம் அறிவியல் கல்லூரி (தஞ்சாவூர்)  
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**Examiners**

1).

**Dr. R. P. HARIVARAN.**  
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**Research Supervisor**

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2). **Dr. K. THAMRASALAN**  
Asst. Professor

Department of Chemistry  
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