

**“TO ECO-SYNTHESIZE AND CHARACTERIZE IRON OXIDE  
NANOPARTICLES USING CARICA PAPAYA LEAF EXTRACT.”**

**A RESEARCH PROJECT SUBMITTED TO  
SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE**



**FOR THE DEGREE OF  
MASTER OF SCIENCE**

**IN**

**ORGANIC CHEMISTRY**

**UNDER THE FACULTY OF SCIENCE**

**BY**

**MISS.RUPALI MARUTI THORAT**

**UNDER THE GUIDANCE OF**

**PROF.MS. G.B. HANDAGE**

**DEPARTMENT OF CHEMISTRY**

**G.M.D. ARTS, B.W. COMMERCE AND SCIENCE COLLEGE, SINNAR  
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**OCT/NOV 2024-2025**



Maratha Vidya Prasarak Samaj's

G.M.D. ARTS, B.W. COMMERCE AND SCIENCE COLLEGE,  
SINNAR, DIST- NASHIK

### DEPARTMENT OF CHEMISTRY

This is to certify that the work incorporated in the project entitled

**Topic name:** "To eco-synthesize and characterize iron oxide nanoparticles using Carica papaya leaf extract."

Was satisfactorily carried out by **Miss Rupali Maruti Thorat** of **M.Sc. Organic Chemistry**. He has completed this project under my supervision and guidance during **Academic Year 2024 -2025**. This project work submitted by his original and the scientific information obtain from other sources have been acknowledged.

**PROF.MS. G.B. HANDAGE**

(Project Guide)



Maratha Vidya Prasarak Samaj's  
G.M.D. ARTS, B.W. COMMERCE AND SCIENCE COLLEGE,  
SINNAR, DIST- NASHIK  
DEPARTMENT OF CHEMISTRY

## CERTIFICATE

This is to certify that PG dissertation entitled Synthesis "To eco-synthesize and characterize iron oxide nanoparticles using Carica papaya leaf extract" submitted by **Miss. Rupali Maruti Thorat** and it was carried out by the candidate under the supervision of **Prof. Ms. G.B. Handage**. He has successfully completed the project work in Organic Chemistry (CHO-607) during the Sem-III of academic year 2024-2025.

Date: 14/11/2024

Place: Sinnar

PROF. MS. G.B. Handage Prof. (Dr) M.R. Gaware

(Project Guide)

(HoD)

Dr. P.V. Rasal

PRINCIPAL  
(Principal)  
G.M.D. Arts, B.W. Commerce and  
Science College, Sinnar, Dist. Nashik

Internal Examiner

External Examiner

External Examiner

## DECLARATION

I hereby declare that the presented Research Project on **To eco-synthesize and characterize iron oxide nanoparticles using Carica papaya leaf extract** is uniquely prepared by me at G.M.D. Arts, B.W. Commerce And Science College Sinnar under the guidance of **Prof.Ms. G.B. Handage.**

Place: Sinnar

Date: 14/11/2024

Sign- Thorat

Name-Rupali Maruti Thorat

## ACKNOWLEDGMENT

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Sign- 

Name – Throat Rupali Maruti