

**GREEN SYNTHESIS OF MnO_2 NANORODS USING PHYLLANTHUS AMARUS PLANT
AND THEIR LUMINESCENCE STUDIES.**

**“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

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UNDER THE GUIDANCE OF

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**WORKPLACE
DEPARTMENT OF CHEMISTRY AND RESEARCH CENTER
OCT-NOV
2024-2025**



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This is to certify that the work imported in the uncorrupted in the project entitled.

Topic name: Green synthesis of MnO_2 Nano rods using phyllanthus amarus plant and their luminescence studies.

Was satisfactorily carried out by **Mr. Andhale Akash Sahebrao** 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

B.D. Maske
22.04.2025

Asst.Prof. Mr. Balasaheb Maske
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CERTIFICATE

This is to certify that PG dissertation entitled Synthesis Green synthesis of MnO_2 nanorods using to Phyllanthus amarus plant and their luminescence studies submitted by Mr. Akash Sahebrao Andhale and the candidate under the supervision of Mr. Balasaheb Mhaske carried it out. He has successfully completed the project work in Organic Chemistry (CHO-656RP) during the Sem-IV of academic year 2024-2025.

Date:

Place: Sinnar

Balasaheb Maske
22.04.2025
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DECLARATION

We certify that we read this thesis Design, Synthesis of MnO_2 (manganese dioxide) for the award of the degree of Master of Science in Organic Chemistry at Department of Chemistry, G.M.D. Arts, B. W. Commerce and Science College, Sinnar, Nashik. Carried out by the candidate under the supervision of. **Asst. Prof. Mr. Balasaheb Maske sir** (Assistant professor, Department of Chemistry, G.M.D. Arts, B. W. Commerce and Science College, Sinnar, Nashik) during Academic year 2024-2025.

Name- Andhale Akash Sahebrao

M. Sc. (OrganicChemistry)