

Synthesized Ni-doped Indium oxide as a reusable catalyst for one pot three component synthesis of 2-Amino-7-Hydroxy-4-Phenyl-4H-Chromene-3-Carbonitrile in water medium and their antimicrobial molecular docking 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

Mr. Pratik Sampat Bhabad

UNDER THE GUIDANCE OF

Mr. Jagdish Ghotekar

DEPARTMENT OF CHEMISTRY

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

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Year- 2024-25



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

Topic name: **Synthesized Ni-doped Indium oxide as a reusable catalyst for one pot three component synthesis of 2-Amino-7-Hydroxy-4-Phenyl-4H-Chromene-3-Carbonitrile in water medium and their antimicrobial molecular docking studies.**

Was satisfactorily carried out by **Mr. Pratik Sampat Bhabad** of M.Sc.II 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 obtained from other sources have been acknowledged.

Mr. Jagdish Ghotekar
(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 **Synthesized Ni-doped Indium oxide as a reusable catalyst for one pot three component synthesis of 2-Amino-7-Hydroxy-4-Phenyl-4H-Chromene-3-Carbonitrile in water medium and their antimicrobial molecular docking studies** submitted by **Mr. Pratik Sampat Bhabad** and it was carried out by the candidate under the supervision of **Mr. Jagdish Ghotekar**. He has successfully completed the project work in Organic Chemistry (CHO-681) during the Sem-IV of academic year 2024-2025.

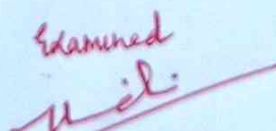
Date: 22/04/2025
Place: Sinnar


Mr. Jagdish Ghotekar
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Internal Examiner


External Examiner


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DECLARATION

I hereby declare that the presented Research Project on **Synthesized Ni-doped Indium oxide as a reusable catalyst for one pot three component synthesis of 2-Amino-7-Hydroxy-4-Phenyl-4H-Chromene-3-Carbonitrile in water medium and their antimicrobial molecular docking studies** is uniquely prepared by me at **G.M.D. Arts, B.W. Commerce And Science College Sinnar** under the guidance of **Mr. Jagdish Ghotekar**.

- ☐ I respect and am grateful to our Respected Principal Prof. Dr. H. B. Patil Sir for providing me with an opportunity to do the project and giving all the support and guidance which helped me to complete the project successfully.
- ☐ I would like to thank our Hon. Prof. Dr. H. B. Patil, Governor Sir for his constructive help during project.
- ☐ I would like to thank Mr. Jagdish Ghotekar (Project Guide) for their constant encouragement, support and guidance that helped me to navigate through the various challenges of the project.
- ☐ I would like to thank all the faculty members of the Department of Chemistry and the supporting staff for equipping me with the theoretical and practical knowledge necessary to complete the project.
- ☐ I would like to thank my classmates and colleagues for their feedback, suggestions, and stimulating discussions that enriched my understanding of the project.

Place: Sinnar

Date: 22/04/2025

Sign- 

Name-Pratik Sampat Bhabad