

**“HYDROTHERMAL SYNTHESIS AND CHARACTERIZATION
OF COBALT DOPED INDIUM OXIDE (CO- IN₂O₃)”**

**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. ABHIJIT KAMLAKAR BELOTE

UNDER THE GUIDANCE OF

MR. JAGDISH GHOTEKAR SIR

DEPARTMENT OF CHEMISTRY

**G.M.D. ARTS, B.W. COMMERCE AND SCIENCE COLLEGE, SINNAR
422103**

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: Hydrothermal Synthesis and Characterization of cobalt doped Indium oxide (co-In₂O₃).

Was satisfactorily carried out by **Mr. Abhijit Kamlakar Belote** 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 obtained from other sources have been acknowledged.

Mr. Jagdish Ghotekar sir
(Project Guide)



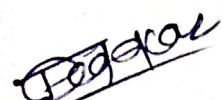
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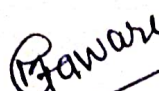
CERTIFICATE

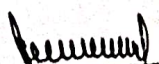
This is to certify that PG dissertation entitled synthesis "Hydrothermal Synthesis and Characterization of cobalt doped Indium oxide ($\text{Co-In}_2\text{O}_3$)". submitted by by **Mr. Abhijit Kamlakar Belote** and it was carried out by the candidate under the supervision of **Mr. Jagdish Ghotekar Sir**. He has successfully completed the project work in Organic Chemistry (CHO-607) during the Sem-III of academic year 2024-2025.

Date:


Place: Sinnar

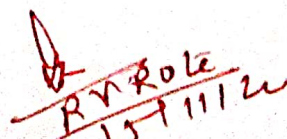

Mr. Jagdish Ghotekar
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Internal Examiner


External Examiner


External Examiner

DECLARATION

I hereby declare that the presented Research Project on "Hydrothermal Synthesis and Characterization of Cobalt doped Indium oxide ($\text{Co-In}_2\text{O}_3$)" is uniquely prepared by me at G.M.D. Arts, B.W. Commerce And Science College Sinnar under the guidance of Mr. Jagdish Ghotekar Sir.

I would like to thank Mr. Jagdish Ghotekar Sir, G.M.D. Arts, B.W. Commerce And Science College Sinnar for providing me the necessary facilities, material and facilities to carry out this project.

I would like to thank the College Principal, Dr. P. V. Kernal for their support and providing infrastructural facilities for this project.

I would like to thank (HOD) Mr. Dr. M. R. Ghotekar for his constructive guidance during project.

I would like to thank Mr. Jagdish Ghotekar Sir, Project Guide for his constant encouragement, insight for difficulties, and expert guidance and advice me to navigate through the many challenges of this project.

I would like to thank all the faculty members of the Department of Chemistry for inspiring me with the theoretical and practical knowledge necessary to complete this project.

I would like to thank my classmates and friends for their constant encouragement and stimulating discussion throughout the entire project.

Sinnar

Sign - Abote
Name- Mr. Abhijit Kamalakar Belote

ACKNOWLEDEMENT

- I would like to thank M.V.P. Samaj's G.M.D.Arts B.W.Commerce and Science College Sinner for providing me the necessary resources, infrastructural , and facilities to carry out this project.
- I would like to thank our College Principal Dr. P. V. Rasal for constant support and providing infrastructural facility for this project work.
- I would like to thank, HOD Prof. Dr. M.R. Gaware for his constructive help during project.
- I would like to thank, **Mr. JAGDISH N. GHOTEKAR** (Project Guide), for their constant Encouragement, insightful feedback, and expert guidance that helped me to navigate through the various challenges of this project.
- I would like to thank all the faculty members of the Department of Chemistry, for Imparting me with the theoretical and practical knowledge necessary to complete this project.
- I would like to thank my classmate and colleagues, for their feedback suggestion and stimulating discussions that enriched my understanding of the subject matter.

Sign-


Name- **BELOTE ABHIJIT KAMLAKR**