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CERTIFICATE

It is certified that the work contained in the thesis titled “*SYNTHESIS OF PLASMONIC THIN FILM FOR MULTI-FUNCTIONAL PHOTONIC APPLICATIONS*” by “*SOBHAN HAZRA*” has been carried out under my supervision and that this work has not been submitted elsewhere for a degree.

It is further certified that the student has fulfilled all the requirements of Comprehensive, Candidacy, and SOTA for the award of a Ph.D. degree.

Date: 03/09/2025

Place: Varanasi


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DECLARATION BY THE CANDIDATE

I, **SOBHAN HAZRA**, certify that the work embodied in this Ph.D. thesis is my own bonafide work carried out by me under the supervision of **Prof. BHOLA NATH PAL** for a period from **December 2020** to **April 2025** at the **SCHOOL OF MATERIALS SCIENCE AND TECHNOLOGY**, Indian Institute of Technology (Banaras Hindu University) Varanasi, Varanasi, India. The matter embodied in this Ph.D. thesis has not been submitted for the award of any other degree/diploma. I declare that I have faithfully acknowledged and given credits to the research workers wherever their works have been cited in my work in this thesis. I further declare that I have not willfully copied any other's work, paragraphs, text, data, results, *etc.*, reported in journals, books, magazines, reports dissertations, thesis, *etc.*, or available at websites and have not included them in this thesis and have not cited as my own work.


Date: 03/09/2025

Place: Varanasi

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CERTIFICATE BY THE SUPERVISOR

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.


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