Application of polymer inclusion membrane to recover nickel and gold: A method to complement hydrometallurgical recycling of waste printed circuit boards

Thesis submitted in partial fulfillment
for the Award of degree

Doctor of Philosophy

By

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It is certified that the work contained in the thesis titled **'Application of polymer inclusion membrane to recover nickel and gold: A method to complement hydrometallurgical recycling of waste printed circuit boards'** by **Rohit Jha** has been carried out under my supervision and this work has not been submitted elsewhere for a degree.

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

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DECLARATION BY THE CANDIDATE

I, **'Rohit Jha'**, certify that the work embodied in this thesis is my own bona fide work and carried out by me under the supervision of **'Prof. Kamalesh K. Singh'** from July 2019 to March 2024, at the 'Department of Metallurgical Engineering', Indian Institute of Technology (BHU), Varanasi. The matter embodied in this 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 worker 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.

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Place: Varanasi

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It is certified that the above statement made by the student is correct to the best of my knowledge

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