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It is certified that the work contained in the thesis titled “*CALORIMETRIC AND ELECTROCHEMICAL MEASUREMENTS OF BINARY AND TERNARY ALLOYS OF INDIUM, TIN AND BISMUTH.*” by *MUKESH RAUSHAN KUMARARUP* 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, Candidacy and SOTA.

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## **DECLARATION BY THE CANDIDATE**

I, “MUKESH RAUSHAN KUMAR”, certify that the work embodied in this thesis is my own bonafide work and carried out by me under the supervision of “Dr. C.K. BEHERA and Prof S. MOHAN” from JULY 2013 to DECEMBER 2018 at the DEPARTMENT OF METALLURGICAL ENGINEERING, Indian Institute of Technology, 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 workers wherever their works have been cited in my work in this thesis. I further declare that I have not will fully copied any other’s work, paragraphs, text, data, results, 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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## **CERTIFICATE BY THE SUPERVISOR**

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

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