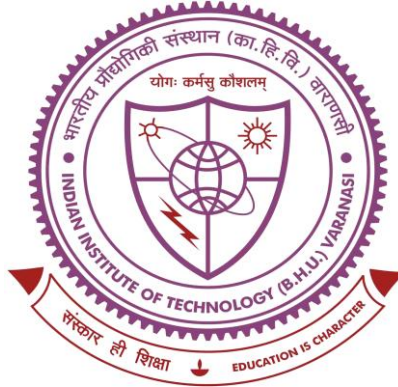


**PHYSIO-MECHANICAL CHARACTERIZATION OF Ti—SiO<sub>2</sub>  
AND HAp-SiO<sub>2</sub> COMPOSITE WITH TAILORED  
MICROSTRUCTURE FABRICATED USING RICE HUSK AS  
SPACE HOLDER FOR TISSUE ENGINEERING  
APPLICATION**



**THESIS SUBMITTED IN PARTIAL FULFILLMENT  
FOR THE AWARD OF DEGREE**

**DOCTOR OF PHILOSOPHY**

**By**

**Mayank Kumar Yadav**

**Department of Ceramic Engineering  
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## CERTIFICATE

It is certified that the work contained in the thesis titled *“Physico-Mechanical Characterization of porous Ti-SiO<sub>2</sub> and HAp-SiO<sub>2</sub> Composites with Tailored Microstructure Fabricated Using Rice Husk as Space Holder for Tissue Engineering Application”* by *“Mayank Kumar Yadav”* 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, "*Mayank Kumar Yadav*", certify that the work embodied in this thesis is my own bonafide work and carried out by me under the supervision of "*Prof. Vinay Kumar Singh*" from "*January 2019*" to "*June 2022*", at the "*Department of Ceramic 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 workers wherever their works have been cited in my work in this thesis. I further declare that I have not wilfully copied any other's work, paragraphs, text, data, results, *etc.*, reported in journals, books, magazines, reports dissertations, theses, *etc.*, or available at websites and have not included them in this thesis and have not cited as my own work.

**Date:** 15/06/2022

**Place:** IIT (BHU) Varanasi

**Mayank Kumar Yadav**

## **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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Dedicated to My Beloved  
**PARENTS**

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**Date:** 15/06/2022

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**Mayank Kumar Yadav**

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