# $BaTiO_3$ BASED FERROELECTRIC CERAMICS FOR BACTERIAL REMEDIATION IN AQUEOUS SYSTEMS

A Thesis

Submitted

by

**Sandeep Kumar Shukla (D14015)**

for the award of the degree of

**Doctor of Philosophy**


**SCHOOL OF ENGINEERING**

**INDIAN INSTITUTE OF TECHNOLOGY MANDI**

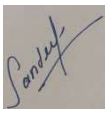
**Mandi, Himachal Pradesh -175001**

**March, 2020**

## Declaration by the Research Scholar

This is to certify that the thesis entitled "**$BaTiO_3$ Based Ferroelectric Ceramics for Bacterial Remediation in Aqueous Systems**" submitted by me to the Indian Institute of Technology Mandi for the award of the degree of Doctor of Philosophy is a bonafide record of research work carried out by me in the School of Engineering, Indian Institute of Technology Mandi, under the supervision of Dr. Satvasheel Powar and Dr. Rahul Vaish. The contents of this thesis, in full or in parts, have not been submitted to any other Institute or University for the award of any degree or diploma.

In keeping with the general practice of reporting scientific observation, due acknowledgements have been made wherever the work described is based on the findings of other investigators.



I.I.T. Mandi (H.P.) Sandeep Kumar Shukla

Date: 04/09/2020

# Thesis Certificate

This is to certify that the thesis entitled "**$BaTiO_3$ Based Ferroelectric Ceramics for Bacterial Remediation in Aqueous Systems**" submitted by Mr. Sandeep Kumar Shukla to the Indian Institute of Technology Mandi for the award of the degree of Doctor of Philosophy is a bonafide record of research work carried out by him under our supervision in the School of Engineering, Indian Institute of Technology Mandi. The contents of this thesis, in full or in parts, have not been submitted to any other Institute or University for the award of any degree or diploma. In keeping with the general practice of reporting scientific observation, due acknowledgements have been made wherever the work described is based on the findings of other investigators.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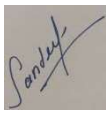

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