

UNDERTAKING FROM THE CANDIDATE

I, **Ashutosh Upadhyay**, a research scholar under the supervision of **Dr. Akhilesh Kumar Singh**, Associate Professor, School of Materials Science and Technology, Indian Institute of Technology, Banaras Hindu University give undertaking that the thesis entitled “**Structural and Phase Transition Studies on $(1-x)\text{Bi}(\text{Mg}_{1/2}\text{B}'_{1/2})\text{O}_3-x\text{PbTiO}_3$ [$\text{B}'=\text{Ti, Zr}$] Piezoceramics**” submitted by me for the degree of **Doctor of Philosophy** is a record of first-hand research work done by me during the period of study.

I avail myself to responsibility such as an act will be taken on behalf of me, mistakes, errors of facts, and misinterpretations are of course entirely my own.

Date.....

Place: Varanasi

(Ashutosh Upadhyay)

CANDIDATE'S DECLARATION

I, **Ashutosh Upadhyay**, certify that the work embodied in this Ph. D. thesis is my own bonafide work carried out by me under the supervision of **Dr. Akhilesh Kumar Singh** for a period from September 2011 to Jun 2016 at School of Materials Science and Technology, Indian Institute of Technology, (Banaras Hindu University) Varanasi. 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, given credit to and referred to the research workers wherever their works have been cited in the text and the body of the thesis. I further certify that I have not willfully lifted up some other's work, para, text, data, results, etc. reported in the journals, books, magazines, reports, dissertations, theses, etc., or available at websites and included them in this Ph.D. thesis and cited as my own work.

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Place: Varanasi

(Ashutosh Upadhyay)

Certificate from the Supervisor

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

(Dr. Akhilesh Kumar Singh)

Supervisor

(Prof. Rajiv Prakash)

Coordinator



पदार्थ विज्ञान एवं प्रौद्योगिकी स्कूल
SCHOOL OF MATERIALS SCIENCE AND TECHNOLOGY
भारतीय प्रौद्योगिकी संस्थान
काशी हिन्दू विश्वविद्यालय
वाराणसी-221005, भारत

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VARANASI-221005,

Tel.: +91-542-6702741; दूरभाष संख्या: ९१-५५२-६७०२७४१; Fax: +91-542-2368428; फैक्स संख्या: ९१-५५२-२३६८४२८; E-mail: coordinator.mst@iitbhu.ac.in

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Title of the Thesis: “**Structural and Phase Transition Studies on (1-x)Bi(Mg_{1/2}B'_{1/2})O₃-xPbTiO₃ [B'=Ti, Zr] Piezoceramics**”

Candidate's Name: **Ashutosh Upadhyay**

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