

DECLARATION BY THE CANDIDATE

I, Preeti Kumari, certify that the work embodied in this Ph. D. thesis is my own bona fide work and carried out by me under the supervision of Prof. Devendra Kumar from **23rd July 2014** to **28th April 2018** at the Department of Ceramic Engineering, Indian Institute of Technology (Banaras Hindu University), 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 work has 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 :

Signature of the Student

Place :

Preeti Kumari

CERTIFICATE BY THE SUPERVISOR

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

Supervisor

Professor and Head

Department of Ceramic Engineering
Indian Institute of Technology (BHU),
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Signature of Head of Department

“SEAL OF THE DEPARTMENT”