

## DECLARATION

I hereby declare that the work reported in the Ph.D. thesis entitled “**Production, characterization and immobilization of thermo-alkali-stable xylanase from *Geobacillus thermodenitrificans* X1 and its application in paper pulp bio-bleaching**” submitted at **Jaypee University of Information Technology, Wagnaghat, India**, is an authentic record of my work carried out under the supervision of **Dr. Sudhir Kumar**. I have not submitted this work elsewhere for any other degree or diploma. I am fully responsible for the contents of my Ph.D. Thesis.



*Ritika*  
**Ritika Verma**

Enrollment no. 136559

Department of Biotechnology and Bioinformatics

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Date: *10/12/2019*

## CERTIFICATE

This is to certify that the work reported in the Ph.D. thesis entitled “**Production, characterization and immobilization of thermo-alkali-stable xylanase from *Geobacillus thermodenitrificans* X1 and its application in paper pulp bio-bleaching**” submitted by **Ritika Verma (Enrollment No. 136559)** at **Jaypee University of Information Technology, Wagnaghat, India**, is a bonafide record of her original work carried out under my supervision. This work has not been submitted elsewhere for any other degree or diploma.



  
10/12/19  
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*Ritika*