

DECLARATION BY THE CANDIDATE

I, **Sarthak Singhal**, certify that the work embodied in this thesis is my own bona fide work and carried out by me under the supervision of **Dr. Amit Kumar Singh** from **October 2012 to November 2015** at the **Department of Electronics Engineering**, Indian Institute of Technology, 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 willfully lifted up any other's work, paragraphs, text, data, results, *etc.*, reported in journals, books, magazines, reports dissertations, theses, *etc.*, or available at websites and included them in this thesis and cited as my own work.

Date :

Place: VARANASI

Signature of the Student

(SARTHAK SINGHAL)

CERTIFICATE BY THE SUPERVISOR

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

Supervisor(s)

Dr. Amit Kumar Singh

Department of Electronics Engineering

Indian Institute of Technology (BHU)

Signature of Head of Department/Coordinator of School(s)