

## **DECLARATION BY THE CANDIDATE**

I, Ekta Goel, certify that the work embodied in this Ph. D. thesis is my own bonafide work and carried out by me under the supervision of Prof. S. Jit from "23/07/2013" to "22/12/2017", at the Department of Electronics Engineering, 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 credits to and referred to the research workers wherever their works have been cited in the text and the body of the thesis. I further declare that I have not willfully 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:**

**Ekta Goel**

## **CERTIFICATE BY THE SUPERVISOR**

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

**(Prof. S. Jit)**

**Supervisor**

**Department of Electronics Engineering**

**IIT (BHU), Varanasi**

**Signature of Head of Department**

*"SEAL OF THE DEPARTMENT"*