

# Declaration

Hereby I declare that:

1. The thesis comprises only my original work towards Ph.D. except where indicated.
2. Due acknowledgements have been made in the text to all other materials used.
3. This work has not formed the basis for the award of any degree, diploma, fellowship, associateship or similar title of any University or Institution.

---

Darshana A. Patel  
Department of Applied Mathematics  
Faculty of Technology & Engineering  
The Maharaja Sayajirao University of Baroda  
Vadodara -390001