



A Thesis entitled

**MATHEMATICAL MODELING OF MAGNETIC FLUID  
LUBRICATION WITH RESPECT TO BEARING  
PROBLEMS**

Submitted to

**The Maharaja Sayajirao University of Baroda**

For the partial fulfillment of the  
Degree of

**Doctor of Philosophy**

in

**Applied Mathematics**

By

**DILIP B. PATEL**  
**(Reg. No.243-2011)**

under the supervision of

**DR. RAJESH C. SHAH**  
Associate Professor  
**(February, 2015)**