**TABLE OF CONTENTS**

ACKNOWLEDGEMENTS ii LIST OF ILLUSTRATIONS vii

LIST OF TABLES ix

LIST OF SYMBOLS x

ABSTRACT xv

CHAPTER TITLE

1. INTRODUCTION 1
   1. Introduction to rotating Electrical machine
   2. Polyphase induction motors
   3. Electromagnetic ( or ) interaction Torque
   4. Transient Processes in Electric Machines
   5. The laws of electromechanical energy conversion
   6. Outlines of thesis
2. MATHEMATICAL MODELS OF GENERALIZED

ELECTRIC MACHINE

2.1 Transformer type equivalent circuit of the induction motor

2.2 The primitive four winding

2.3The equation of the generalized two phase induction motor

2.4 Phase coordinate model (ABC) of the induction motor

2.5 Space phasr notation

2.5.1 Current space phasor

2.5.2 Flux linkage space phasor

3. COMMONLY USED REFERENCE FRAME MODELS

3.1 Stationary reference frame coordinate model (α-β)

3.2 Rotor reference coordinate frame model (d-q)

3.3 Synchronously reference frame coordinate model (u-v)

4. MATHEMATICAL MODELS OF VARIABLE SPEED

FREQUENCY CONTROLLED INDUCTION MOTOR (ABC-dq)

4.1

vi