



SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore - 641 107

An Autonomous Institution

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Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE NAME : 19EE504 SPECIAL ELECTRICAL MACHINES

III YEAR / Vth SEMESTER EEE

Unit 1 - PMBLDC

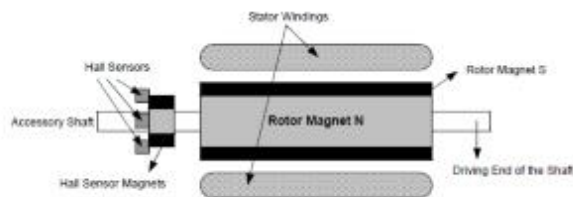
By

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Overview

- BLDC Motor- Introduction
- Mechanical Commutator of DC motors
- Electronic Commutator of BLDC motor
- Comparison.



BLDC Motor - Introduction

- PM square wave motor
- Armature winding in stator
- PM rotor
- Commutation is implemented electronically with a drive amplifier that uses semiconductor switches to change current in the windings based on rotor position feedback.



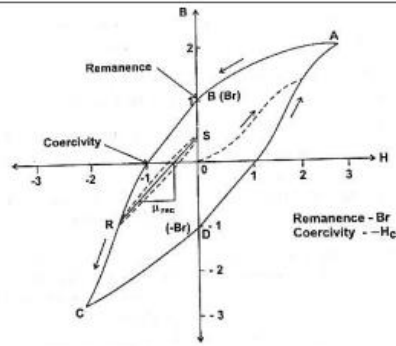
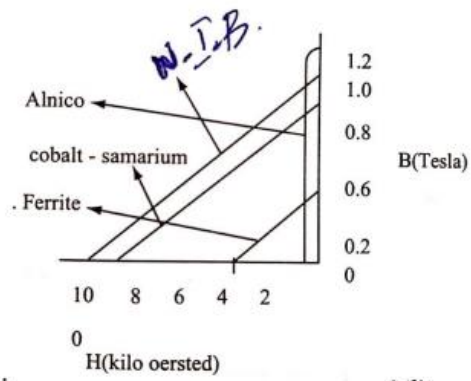
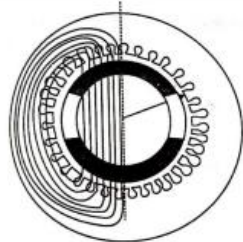
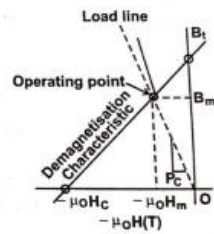


Fig. 5.9: B-H hysteresis loop of hard permanent magnet material



(a) Motor cross section and flux pattern



(b) Magnet demagnetization

Fig. 5.32: Magnetic circuit analysis of BLDC motor

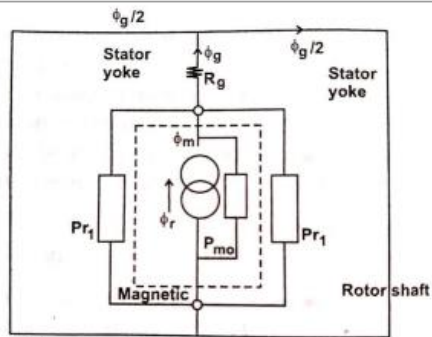


Fig. 5.33: Magnetic equivalent circuit.