



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)



COIMBATORE-35

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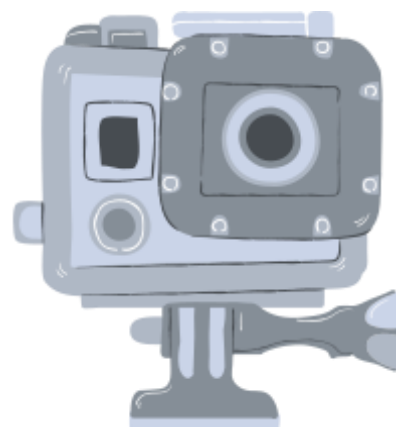
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

**COURSE NAME: 19EET207/ SYNCHRONOUS AND INDUCTION
MACHINES**

II YEAR / IV SEMESTER

Unit 5 – SPECIAL MACHINES

Topic 6: Reluctance Motor





GUESS THE TOPIC NAME...

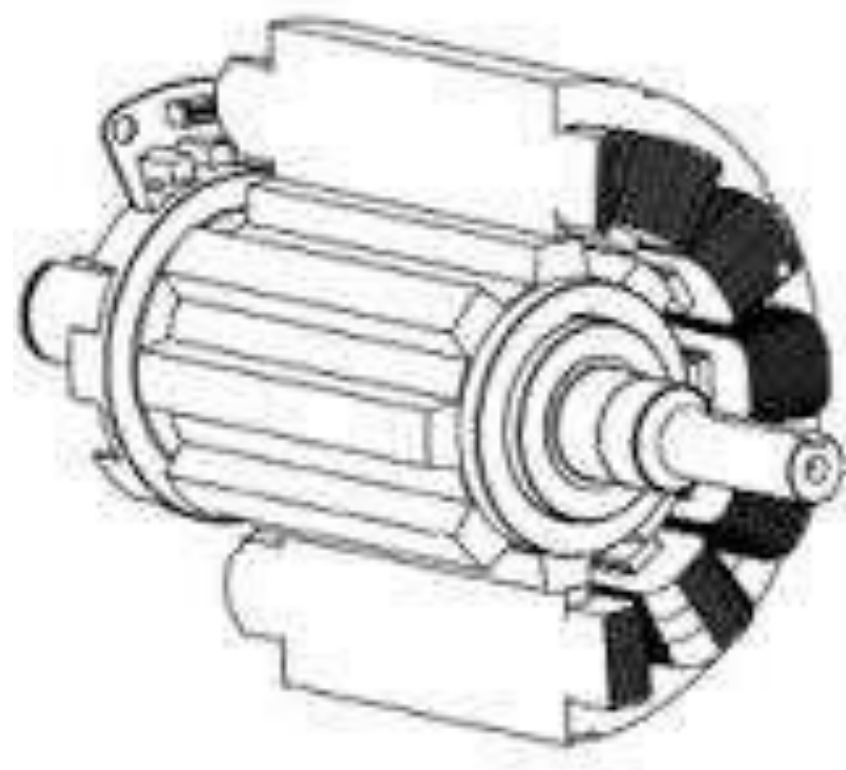


- An induction motor with a modified rotor
 - Single-phase or Three-phase
 - rotor turns in synchronism with the rotating magnetic flux



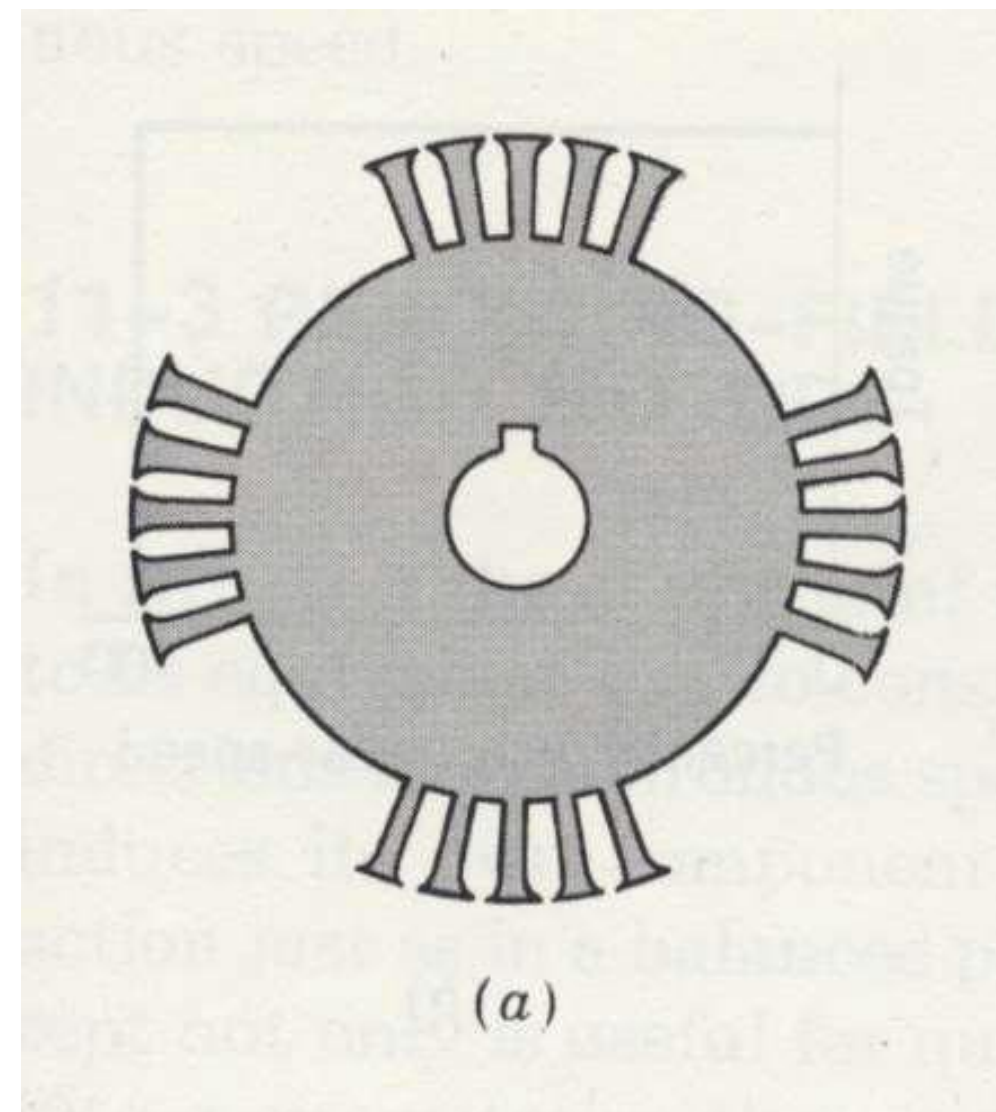
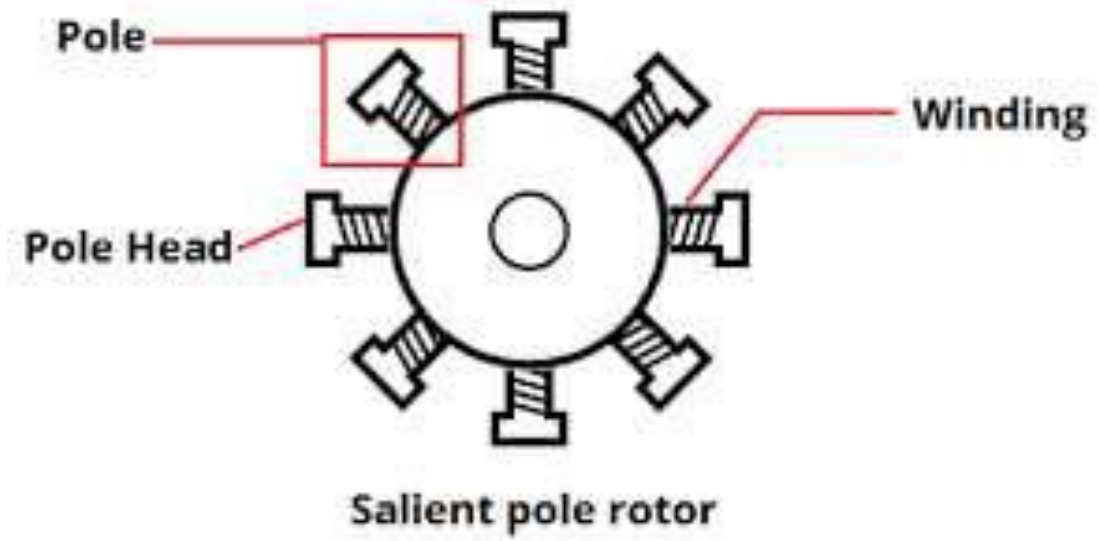
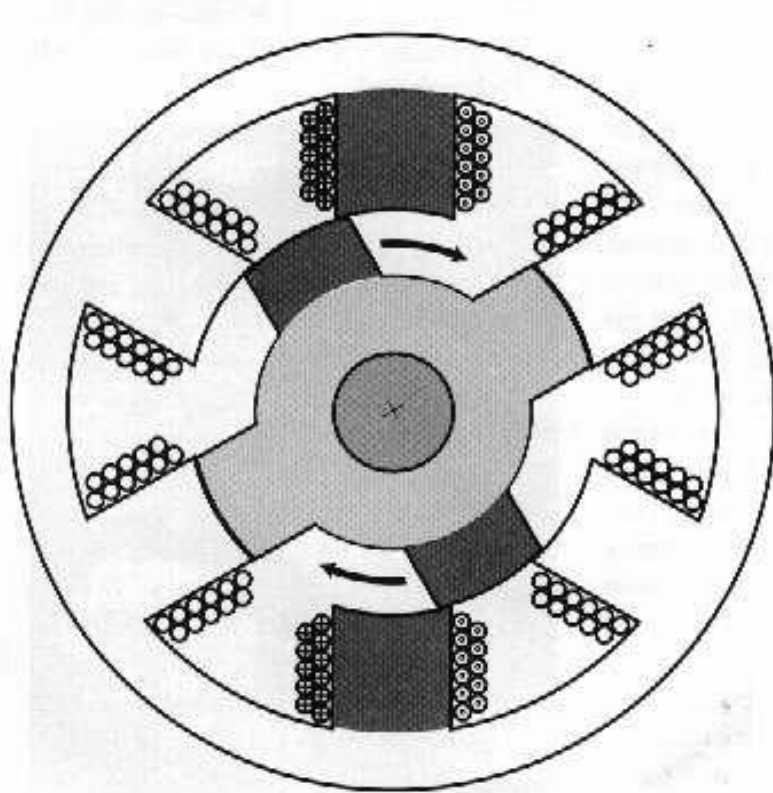
Reluctance motor

- It is a motor which depends on reluctance torque for its operation.
- Reluctance torque is the torque induced in an iron object in the presence of external magnetic field.





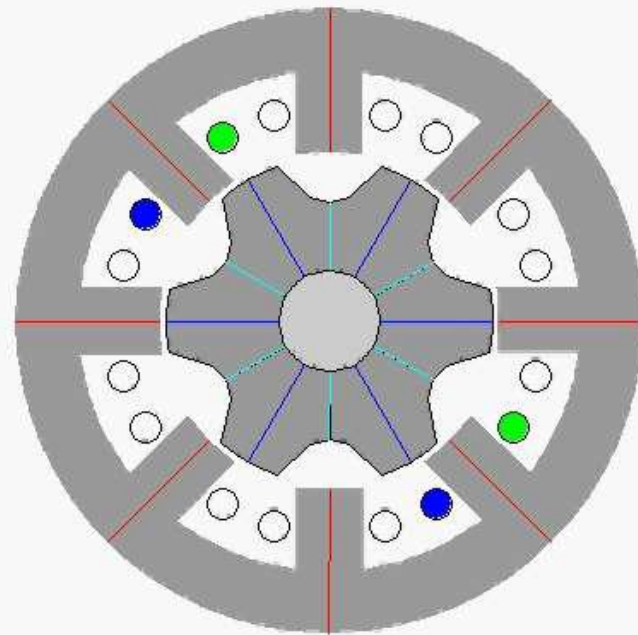
Construction





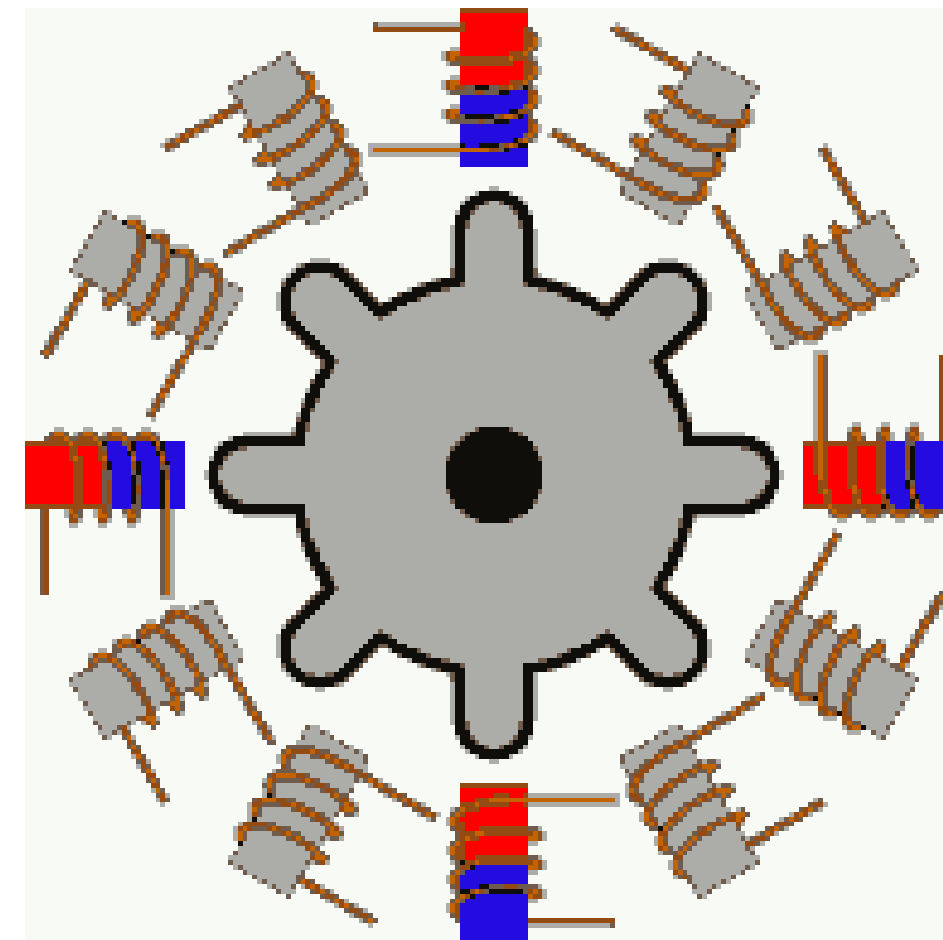
WORKING PRINCIPLE

SWITCHED-RELUCTANCE MOTOR



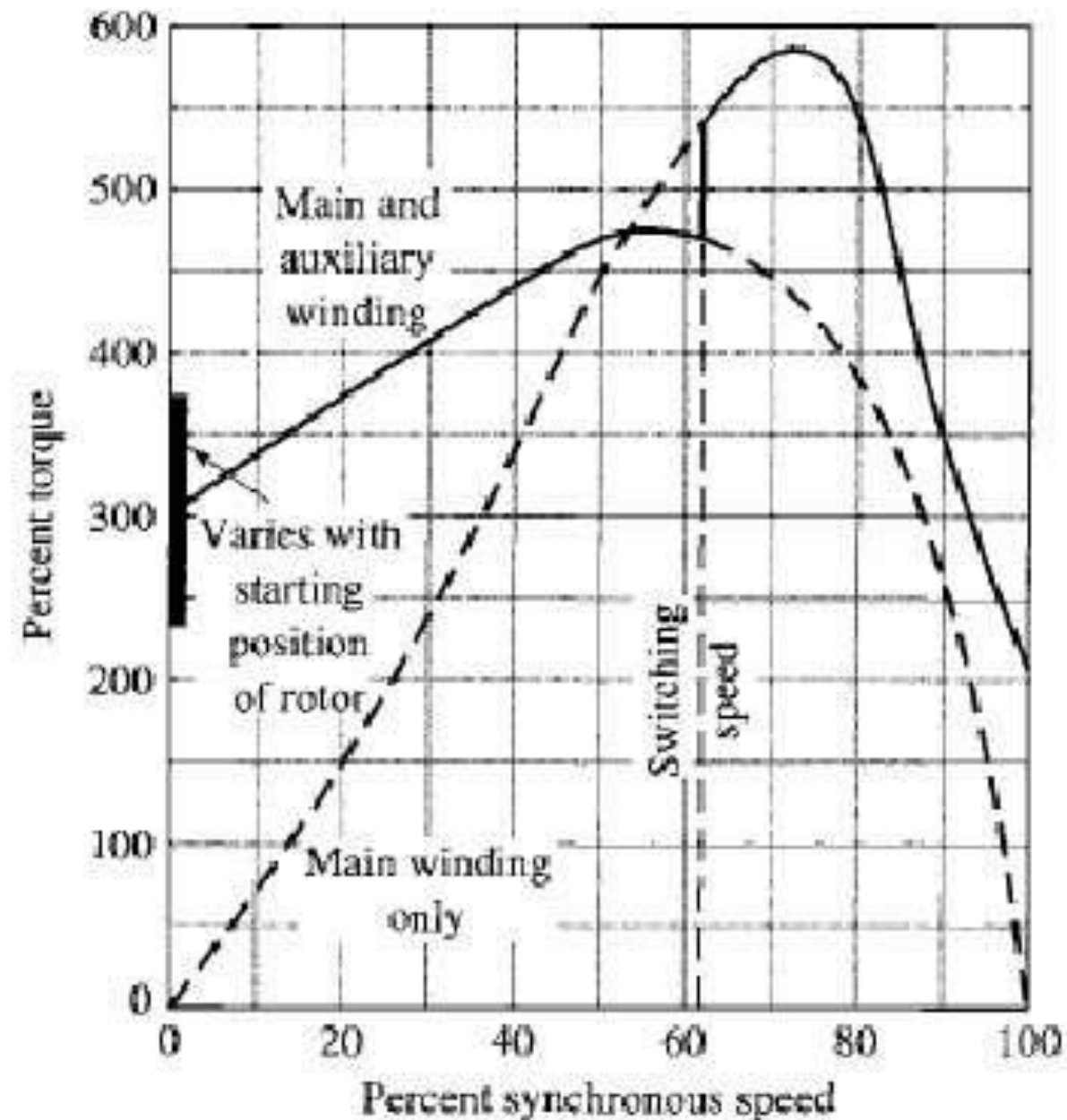
- Like a normal Synchronous motor, it has no starting torque and will not start by itself.
- It start like an induction motor and for better starting torque we use auxiliary windings.

- Torque applied to the rotor is proportional to $\sin 2\delta$ (δ is electrical angle between the rotor and the stator magnetic fields)
- Maximum angle will be 45° .





Torque and Speed Characteristic



- It starts like an induction motor and works like a synchronous motor.
- Therefore, it is also known as an “induction synchronous” motor.
- The starting torque is highly dependent on the position of the rotor.



Applications

- Analog electric meters.
- Washing machine.
- Hard disk drive motor.
- Sewing Machine motor.





SUMMARY

- Reluctance motor



KEEP
LEARNING..
Thank u

SEE YOU IN NEXT CLASS