



A BRIEF REPORT ON PERMANENT MAGNET ASSISTED SYNCHRONOUS RELUCTANCE MOTORS

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Structure of the report

- Introduction
- Design
- Control
- Comparison to other machines
- Recent research interest





PMSynRelM

actively used in automotive and traction applications

control strategies based on known principles

may use relatively simple mathematical model for control

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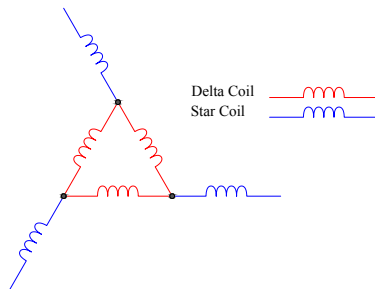


Stator





- **Delta** winding
- **Star** winding
- **Star-Delta** hybrid winding

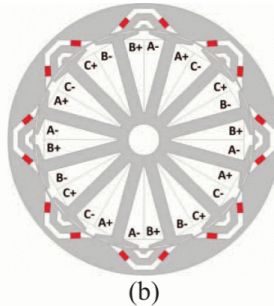
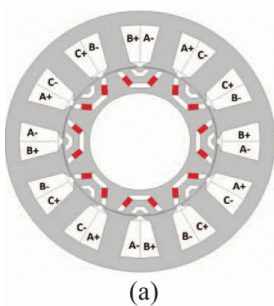




Rotor



- internal/external
- power factor/wide power range \Rightarrow saliency ratio (L_d/L_q)
- shape/placement/number of flux barriers
- magnets - rare earth (with neodymium/dysprosium), non-rare earth (ferrites)





- embedded along the flux barriers, facing the q -axis (a) (improvement of torque)
- crossing the flux barriers, facing the d -axis (b)

