

# **Modelling of Air-Gap Magnetic Flux Density Distribution for Surface-Mounted Permanent Magnet Synchronous Motor Using the Analytical Sub-Domain Method(Book Chapter)**

Rezal, M., Ishak, D., Ahmad, M.S.

## **Abstract:**

This paper discusses an analytical modelling for a slotless surface-mounted permanent magnet synchronous motor (PMSM) at airgap region using the sub-domain method. The slotless PMSM has no cogging effect compared to a slotted PMSM. The radial magnetization of the magnetic flux is applied in the motor design with 6-slot/4-pole configuration. The analytical model of magnetic flux density distributions shows a good agreement with the numerical results from finite element analysis.

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