



## Permanent Magnet Synchronous Motor

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### The Invention

A permanent magnet synchronous motor includes a stator, a rotor rotatable relative to the stator, and a magnetic structure with a low coercive force magnet and a high coercive force magnet that are arranged magnetically in series with respect to each other to define a pole-pair of the permanent magnet synchronous motor. A magnetization level of the low coercive force magnet is changeable by a stator current pulse such that a stator magnetomotive force at a rated current is equal to or larger than a product of a magnetic field strength for fully magnetizing the low coercive force magnet and a thickness of the low coercive force magnet.

#### Tech Fields

- [Engineering : Electric machines](#)
- [Engineering : Engine technologies](#)

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