

*stepper motor, disk rotor, permanent magnet,  
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## **DESIGN AND ELECTROMAGNETIC FIELD SIMULATION OF DISK STEPPER MOTOR WITH PERMANENT MAGNETS**

This paper presents the design and the electromagnetic field simulation of axial-flux permanent-magnet stepper motor with the disc type rotor.

The stepper motor with disc type permanent magnet rotor shows the advantages of higher torque at high speed, low moment of inertia, high torque to weight ratio, low power consumption and iron-less rotor having minimum iron loss using permanent magnets and prepregs.

This paper describes a design of four phase microstepping motor with the disc type rotor. The FEM modeling and the 3D electromagnetic field simulation of the disk stepper motor with permanent magnets is being subject of the article, too. Disc rotor type permanent magnet stepper motor for high torque to inertia ratio is ideal for robotics and CNC machines.

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