عنوان مقاله:

Optimum Design of a Five-Phase Permanent Magnet Synchronous Motor for Underwater Vehicles by use ofParticle Swarm Optimization

محل انتشار:

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نویسندگان:

Reza Ilka - *Faculty of Electrical and Computer Engineering, Babol University of Technology, Babol, Iran*

Asghar Gholamian - *Faculty of Electrical and Computer Engineering, Babol University of Technology, Babol, Iran*

خلاصه مقاله:

Permanent magnet synchronous motors are efficient motors, which havewidespread applications in electric industry due to their noticeable features. One ofthe interesting applications of such motors is in underwater vehicles. In these cases,reaching to minimum volume and high torque of the motor are the major concern.Design optimization can enhance their merits considerably, thus reduce volume andimprove performance of motors. In this paper, a new method for optimum design ofa five-phase surface-mounted permanent magnet synchronous motor is presented toachieve minimum loss and magnet volume with an increased torque. A multiobjectiveoptimization is performed in search for optimum dimensions of the motorand its permanent magnets using particle swarm optimization. The .designoptimization results in a motor with great improvement regarding the originalmotor

کلمات کلیدی:

Permanent magnet, Particle swarm optimization, Finite element analysis,Underwater vehicles

لینک ثابت مقاله در پایگاه سیویلیکا: