

## عنوان مقاله:

Demagnetization Fault Diagnosis of FSPM Motor Based on ReliefF and SVM

## محل انتشار:

فصلنامه سیستم های تبدیل انرژی الکترومکانیکی، دوره 1، شماره 2 (سال: 1398)

تعداد صفحات اصل مقاله: 13

## نویسندگان:

*Iran University of Science and Technology - - -*

*Iran University of Science and Technology - - -*

*Iran University of Science and Technology - - -*

*Iran University of Science and Technology - - -*

## خلاصه مقاله:

Permanent magnet synchronous motors (PMSMs) have recently attracted much attention of scientists due to high reliability, high efficiency, high density of power and torque. However, Permanent magnet (PM) motors suffer from irreversible demagnetization which is one of the most probable problems occurring in these motors. One of the recently developed permanent magnet synchronous motors, is the Flux Switching Permanent Magnet (FSPM) motor whose PM is placed on the stator. In this paper, a novel approach is proposed for the diagnosis of the demagnetization fault in a flux switching permanent magnet motor using electromagnetic torque. In this approach, the harmonic components of the electromagnetic torque are obtained, and then, ReliefF feature selection method is utilized to select the best-ranked harmonic component. The selected harmonic component is then applied to the Support Vector Machine (SVM) classifier to classify different states of the motor's PM. The proposed approach is validated by Finite Element Model (FEM) simulation.

## کلمات کلیدی:

demagnetization, Fault Diagnosis, Feature selection, Machine Learning

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1150197>

