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Inductance determination for air-cored permanent magnet axial flux machine

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Permanent magnet (PM) machines have been widely used in several industrial applications due to their outstanding characteristics. Among these machines comes the axial flux (AFPM) machine of air-cored stator windings. Such a machine has demonstrated several merits over the traditional radial flux PM machines mainly due to the lower electrical losses and shorter axial length. This paper is concerned with the determination of the inductance of air-cored AFPM machine using analytical and finite element analysis (FEA). The results of the two techniques are presented and compared to each other. Analytical and FEA results are validated by experimental results.

Biography

Tareq S El-Hasan has received his BS degrees in Electrical Engineering from Mu'tah University of Jordan in 1989. He has received his PhD degree in Electrical Engineering from University of Hertfordshire in the UK. Currently, he is an Assistant Professor in Electrical Engineering Department and the Vice Dean for Faculty of Engineering at Zarqa University of Jordan. His research interests are in the Permanent Magnet Machines, Design of High Speed Electrical Machines and Pulsed Power. He has worked for Industry for more than 20 years and has published several scientific papers in international journals and conference proceedings. He is a Member of Jordan Association of Electrical Engineers.

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