

Study of Magnetic Properties on the Corrosion Behavior and Influence of Temperature in Permanent Magnet (Nd-Fe-B) Used in PMSM

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Abstract : The use of Permanent magnet (PM) is increasing in the Permanent magnet synchronous machines (PMSM) to fulfill the requirement of high efficiency machines in modern industry. PMSM is widely used in industrial application, wind power plant and automotive industry. Since the PMSM are used in different environment condition, the long-term effect of NdFeB-based magnets at high temperatures and corrosion behavior has to be studied due to irreversible loss of magnetic properties. In this paper, the effect of magnetic properties due to corrosion and increasing temperature in the climatic chamber has been presented. The magnetic moment and magnetic field of the magnet were studied experimentally.

Keywords : permanent magnet (PM), NdFeB, corrosion behavior, temperature effect, Permanent magnet synchronous machine (PMSM)

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