Short Communication

Effect of Silicon Content on Corrosion Resistance of a Cold Rolled Non-Oriented Silicon Steel

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Non-oriented silicon steel is a critical functional material for various types of motor iron cores. When the motor was rotating at high speed in the rainy season, the iron core materials rusted easily. In this paper, the corrosion resistance of low silicon, medium silicon and high silicon non-oriented silicon steel in wet and hot environments was studied. The phase of three materials was tested by XRD, the microstructure and surface morphology before and after corrosion of silicon steel were studied and compared by three-dimensional ultradepth-of-field microscopy. The morphology and composition after corrosion of silicon steel were measured by scanning electron microscope and composition analysis spectrum. The corrosion mechanism of cold rolled non-oriented silicon steel with different silicon contents in wet and hot extreme environments was discussed.

Keywords: non-oriented silicon steel, Si content, corrosion resistance, oxidization film

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