



Alto potencial de absorção de
compósitos a base de Ferrita MnZn e
Xerogel de Carbono com Grafeno

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Resumo

Composite materials based on Manganese and Zinc Ferrite (FeMnZn), Carbon Xerogel (XC) and Carbon Xerogel with Graphene (XCG) were produced to characterize the influence of XCG absorbing electromagnetic material. The properties of electrical permittivity and magnetic permeability were calculated to study the electromagnetic behavior of the composites. The tangent of electric and magnetic loss was analyzed to evaluate the capacitive or dissipative system in each composition. The electromagnetic absorption potential was measured in the Reflection Loss method on X-Band range (8.2-12.4 GHz), due to its application in the Aerospace sector. The results showed a potential of -31dB ($\approx 99.92\%$ absorption) at 12.4 GHz for a thickness of 1.9 mm. The XCG presented great applicability as a reinforcement to increase the electromagnetic absorption potential of composites based on FeMnZn.

Palavras-chave: Materiais compósitos, Ferrita MnZn, Xerogel de carbono, Grafeno, Banda X.