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Mn이 첨가된 $BaTi_4O_9$-ZnO-Ta_2O_5 세라믹스의 특성

II. 결함화학적 고찰

Properties of Mn-doped $BaTi_4O_9$-ZnO-Ta_2O_5 ceramics

Part II, Defect chemical relations

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By means of Scanning Auger Electron Spectroscopy the presence of Ti^{3+} ions in $BaTi_4O_9$-ZnO-Ta_2O_5 ceramics sintered in air atmosphere was observed directly. The doublet peak structures of titanium near 416 eV auger peak were used to identify the valence state of titanium. Correlation between the microwave dielectric loss and the concentration of Ti^{3+} ions is discussed. Also, the quasichemical defect equations for the stabilization of Ti^{3+} ions in $BaTi_4O_9$ - Ta_2O_5 ceramics is presented.

(Key word : Scanning Auger Electron Spectroscopy, dielectric loss, Ti^{3+} ions, Ta_2O_5 dopant)