TiO_2 Varistors doped with La_2O_3 and Ta_2O_5

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TiO_2 doped with different oxides have been studied to different applications. Dopants like Ta_2O_5 have an especial hole over the barrier formation at the grain boundary in the TiO_2 varistors, increasing the nonlinear coefficient and decreasing the breakdown electric field. In this paper, will presented the microstructural and electrical properties of (Ta, La) doped TiO_2 varistor. The results of the electric characterization associated with the microstructural analysis, clarify and confirm the influence of this dopants over the electronic properties of this systems. It will be demonstrate that some of this systems exhibit electrical properties that possibility their use like low voltage varistors, getting 40 V/ cm of breakdown electric field and low non linear coefficient.

Keywords: varistors, TiO_2, Electrical properties, eletroceramic, ceramic processing.