

Study of electrical characteristics and microstructure of zinc oxide varistor through rate-controlled sintering

ABSTRACT

A computer program has been developed to control the firing process of ZnO varistors. The binder burnout and shrinkage stages are controlled through a closed feedback loop using a i286 based personal computer. The effect of rate-controlled sintering (RCS) on the formation of microstructure and simultaneously on electrical characteristics of varistors has been studied in arrester block with Vnom=5 kV and a diameter of 42 mm. Leakage, watt loss and non-linear coefficient has been improved and microstructure with low porosity has been achieved by RCS.

Keyword: Rate-controlled sintering; ZnO varistors; Electrical characteristics