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EFFECT OF DC AND TEMPERATURE STRESSES ON NONLINEAR COEFFICIENT OF ZnO CERAMIC VARISTORS

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ABSTRACT
DC and temperature stresses deterioration were investigated to see the changes of nonlinear coefficient in Zn-Bi-Ti oxide low-voltage ceramics varistors that were sintered at various sintering temperatures from 1140°C to 1230°C and two sintering duration time of 45 and 90 minutes. The sintered ceramic was characterized with XRD, observed with VPSEM for surface morphology, analysed with EDAX for elemental analysis at particular sample area. The sintered ceramics density were observed to decrease with increasing sintering temperature and the Zn-Bi-Ti oxide ceramic sintered at 1140 °C for 45 minutes was found to have the maximum nonlinear coefficient. After applying DC and temperature stresses of 0.75*V*1mA/ 80°C/ 12 h, the nonlinear coefficient value in 90 minutes sintering time decreased with sintering temperature.

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