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Influence of mechanical activation on electrical properties of sintered barium-zinc-titanate ceramics

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Starting mixtures of $BaCO_3$, ZnO and TiO_2 powders were mechanically activated in a planetary ball mill for various periods of time. The powders obtained were sintered non-isothermally to temperatures between 1100 and 1300°C and then held at those temperatures for 120 min. Results of structural characterization using X-ray powder diffraction method, DTA analyses and SEM analyses were conducted for activated and sintered samples. These results were correlated with the results of electric resistivity, capacitance and loss tangent of the samples and it was found that with increasing in milling time, the increase in values of electrical properties was noticed.