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Sythesis of Ba0.7Sr0.3TiO3 ceramics via hybrid method

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Barium strontium titanate (BST) ceramics were prepared by the hybrid method between solid-state reaction (SR) and sol-gel combustion (SC) methods using urea as a fuel. The crystalline powders were prepared by the mixed precursors at SR:SC molar ratio of 1:0.3 calcined at 950^{o}C for 2 hours. The BST ceramics were made of the calcined powders by sintering at 1050-1350^{o}C and instigated the crystal structures by XRD. In every ceramic sample, a pure perovskite structure corresponding to JCPDS no. 34-0411 was detected. SEM revealed an increase in a gain size when a temperature increased. The highest dielectric constant 11580 was found in the sample prepared at 1350^{o}C for 4 hours with dielectric loss of 0.007.

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