



1 **Enhanced energy storage properties of barium strontium titanate ceramics**  
2 **prepared by sol-gel method and spark plasma sintering**

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12 **ABSTRACT**

13 Dense Ba<sub>0.4</sub>Sr<sub>0.6</sub>TiO<sub>3</sub> ceramics with fine grains and uniform microstructure were  
14 prepared by sol-gel method and spark plasma sintering (SPS). The dielectric  
15 properties, microstructures, and energy storage performance of spark plasma sintered  
16 Ba<sub>0.4</sub>Sr<sub>0.6</sub>TiO<sub>3</sub> ceramics were evaluated. Fine Ba<sub>0.4</sub>Sr<sub>0.6</sub>TiO<sub>3</sub> powders were synthesized  
17 by sol-gel method at above 750°C. SPS technique showed its advantages in  
18 suppressing exaggerated grain growth and increasing the relative density of  
19 Ba<sub>0.4</sub>Sr<sub>0.6</sub>TiO<sub>3</sub> ceramics. Diffuse phase transition and nearly linear P-E behavior were  
20 observed in all samples. Moderate dielectric constant (~960), low dielectric loss

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