

# Effect of addition of TiO<sub>2</sub> on the dielectric behavior in radiofrequency region of the ZnNb<sub>2</sub>O<sub>6</sub> ceramic

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This work shows the evaluation of the dielectric properties in the radiofrequency region (RF) of ZnNb<sub>2</sub>O<sub>6</sub> – TiO<sub>2</sub> (ZNT10) composite, where ZnNb<sub>2</sub>O<sub>6</sub> was obtained through the solid-state reaction method and was characterized by X-ray diffraction. Complex Impedance Spectroscopy (CIS) was employed to evaluate the dielectric behavior in the frequency range between 1Hz and 10 MHz with temperature variation.

In the RF analysis, ZNT10 demonstrated a typical universal dielectric response in the frequency of the temperature-dependent conductivity; the frequency-dependent AC conductivity at different temperatures shows that the conduction is thermally activated process. Moreover, the values of the temperature coefficient of capacitance (TCC) demonstrated a change of signal with the frequency.

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