

## TEXTURE AND MICROSTRUCTURE CONTROL IN (SrBi<sub>2</sub>Nb<sub>2</sub>O<sub>9</sub>)<sub>1-x</sub> (Bi<sub>3</sub>TiNbO<sub>9</sub>)<sub>x</sub> CERAMICS

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Texture and microstructure are determinant factors of the physical properties of piezoelectric ceramics. Among them we have those based on compositions (SrBi<sub>2</sub>Nb<sub>2</sub>O<sub>9</sub>)<sub>1-x</sub> (Bi<sub>3</sub>TiNbO<sub>9</sub>)<sub>x</sub>, with an Aurivillius-type structure. It has been shown that from mechanochemically activated precursors it is possible to obtain isotropic and highly densified (>99%) ceramics by hot uniaxial pressing at temperatures as low as 700°C. The ceramics obtained are difficult to pole due to the submicron grain size. In order to promote grain growth without affecting the high density achieved, a combination of hot pressing and natural sintering is tested. The isotropic character of the ceramics, i.e., the absence of texture, is monitored by X-ray diffraction and pole figures. Dielectric strength and piezoelectric response are measured and correlated to the porosity content and grain size.