

# LOW TEMPERATURE CRYSTAL GROWTH AND CERAMIC SINTERING OF BaTiO<sub>3</sub> - TYPE OXYFLUORIDES

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The interest of LiF as additive to BaTiO<sub>3</sub> has been pointed out for sintering dielectric oxyfluoride ceramics at low temperature ( $t_{\text{sint.}} = 930^{\circ}\text{C}$ ). The understanding of the corresponding sintering process leads us to characterize ceramics and single crystals prepared at  $t < 1000^{\circ}\text{C}$ . Ceramic grains and crystals have a composition Ba(Ti<sub>1-x</sub>Li<sub>x</sub>)O<sub>3-3x</sub>F<sub>3x</sub>.

The whole composition of the ceramics (grain and grain boundaries) is compared to that of crystals. This study performed on many samples allows to prove the existence of a grain boundary phase, with low melting temperature, facilitating the grain coalescence. The diffuse character of the phase transition and the grain composition gradient induce a large maximum of the ceramic permittivity at  $T_C$ , result of great interest for dielectric capacitors.