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# Etude structural et caractérisations des céramiques PZT de type pérovskite $\text{Pb}_{1-x}\text{Ca}_x[(\text{Zr}_{0.53}, \text{Ti}_{0.47})_{0.75}\text{Sb}_{0.25}]\text{O}_3$

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**Abstract :** Lead zirconate titanate are prepared from an intermediate composition of a binary mixture of  $\text{PbTiO}_3$  and  $\text{PbZrO}_3$  in the region of coexistence, the morphotropic phase boundary. The mixture of  $\text{PbO}_2$ ,  $\text{TiO}_2$ , and  $\text{ZrO}_2$  was characterized using x-ray diffraction. The solid solution  $\text{Ca}_x\text{Pb}_{1-x}[(\text{Zr}_{0.53}, \text{Ti}_{0.47})_{0.75}\text{Sb}_{0.25}]\text{O}_3$  with  $0 \leq x \leq 0.05$  is investigated at the morphotropic phase boundary, where both phases coexist, tetragonal and rhombohedral. The morphology and size of ceramic grains is investigated using scanning electron microscopy and x-ray diffraction

**Keywords :** PZT, Doping, characterization, Morphotropic phase boundary, X-ray diffraction