Thesis Title	Effect of Strontium (II) Modification on Lead Zirconate Titanate Ceramics
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ABSTRACT

The purpose of this research was to study the effect of strontium (II) modification to lead site in lead zirconate titanate. Variation of the percentage of strontium (II) and of calcining temperature were investigated in order to achieve optimum condition for piezoelectricity. The prepared ceramics were characterized via density measurement, XRD, SEM and optical microscope. Some piezoelectric properties were investigated. The composition of Zr:Ti = 52:48 had an advantage of the higher piezoelectric properties than the composition of Zr:Ti = 65:35.

$(Pb_{0.98}Sr_{0.02})(Zr_{0.52}Ti_{0.48})O_3$ calcined at 800 ^{o}C for 2 h and sintered at 500 ^{o}C for 2 h followed by 1200 ^{o}C for 1 h showed the density about 7.67 g/cm^{3}, ε_r = 1170, k_p = 0.606, Q_m = 481 and d_{33} = 194 pC/N. While $(Pb_{0.998}Sr_{0.002})(Zr_{0.65}Ti_{0.35})O_3$ showed the density about 7.81 g/cm^{3}, ε_r = 604, k_p = 0.423, Q_m = 150 and d_{33} = 93 pC/N.