

Nanostructured piezoelectric ceramics used for SAW Applications.

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Abstract

Piezoceramics seems to be a promising variant to monocrystalline substrates used in SAW components. Because the propagation properties of the piezoceramic substrate are compositionally determined and highly influenced by the density and pores configuration, lead titanate and lead zirconate-titanate systems with several substitutions have been investigated. A mixed oxide route with advanced mechanical milling and controlled sintering processing has been used in order to get fine granulated ceramic powder and high densified bulk. The increasing of the grains during the processing has been carefully investigated by granulometric measurements and SEM. Structural analysis and electrical measurements to establish the influence of the substitutions on the main properties of these systems have been performed too.