

Abstract**Piezoelectric-on-insulator (POI) substrate and process for producing a piezoelectric-on-insulator (POI) substrate.**

The invention relates to a piezoelectric-on-insulator (POI) substrate (100, 200) comprising a support substrate (102) having a first acoustic impedance, a piezoelectric layer (104), especially a layer of lithium tantalate (LTO), lithium niobate (LNO), aluminium nitride (AlN), lead zirconate titanate (PZT), langasite or langatate, a dielectric layer (110) having a second acoustic impedance and sandwiched between the piezoelectric layer (104) and the support substrate (102), an intermediate layer (106) positioned between the support substrate (102) and the dielectric layer (110), characterized in that the intermediate layer (106) is a layer having a variable composition, more particularly along its thickness, such that the acoustic impedance of the intermediate layer (106) varies, especially in a gradual manner, between the values of the first and the second acoustic impedance. The invention relates also to a process for producing such a piezoelectric-on-insulator (POI) substrate and also to a surface acoustic wave device (SAW) comprising such a piezoelectric-on-insulator (POI) substrate.

[Figure 1]