Abstracts

A Rigorous Field Analysis of Multilayered SAW Devices

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A rigorous analysis of the acousto-electric field in general multilayered SAW devices in the time Laplace-transform domain is outlined. The configuration of investigation contains an arbitrary number of homogeneous and reciprocal media of any kind of anisotropy and orientation. The basic equations of homogeneous media are solved using a spatial Fourier transformation. Using this solution and the boundary conditions at the interfaces, the total field problem is reduced to a boundary value problem of the electric potential and the electric surface charge density in the plane of the electrodes, and a relation between the Fourier transforms of these quantities. This dual boundary value problem is solved iteratively, by minimization of the root-mean-square error in one of the boundary conditions.

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