

Yang, J., **Zhou, H.**, and Wang, Z., Vibrations of an Asymmetrically Electroded Piezoelectric Plate, IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 52, no. 11, 2005, pp. 2031-2038.

### **Abstract**

Two-dimensional equations for coupled extensional, flexural, and thickness-shear motions of a piezoelectric plate are obtained systematically from the three dimensional equations of linear piezoelectricity by retaining lower order terms in power series expansions in the plate thickness coordinate. The plate can have asymmetric electrodes on its major surfaces. The equations are specialized to crystals of 6-mm symmetry and are used to analyze thickness-shear vibrations of an asymmetrically electrode plate. Energy trapping, a behavior of thickness-shear modes crucial to applications, is examined.

### **Keywords**

Anti-plane wave, Piezoelectric, Semiconducting