

Applications of Ferroelectric Materials

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Ferroelectric materials are used in a wide variety of applications, including multilayer ceramic capacitors, piezoelectric transducers, actuators, sensors, and energy harvesters, pyroelectrics, and electro-optic devices. This tutorial will discuss key applications of ferroelectric materials, and the structure-property relationships that govern the choice of specific materials. Emphasis will be placed on the use of modified BaTiO_3 in multilayer ceramic capacitors, and perovskite ferroelectrics for piezoelectric applications, including both lead-based and lead-free piezoelectric ceramics, single crystals, and films.