

MEMS Piezoresistive Sensors, A Successfully Invisible Technology: Fifty Years and Counting

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Abstract

Emerging from Bell Labs in 1954, piezoresistance, is the largest and most successful base technology for mechanical sensing. Mainstream silicon wafer processing, microprocessors, and MEMS have driven the development and application of piezoresistive sensors. A measure of a technology's success is the extent to which it becomes invisible to the user by enabling a wide range of applications and being embedded in products. With today's ubiquity of piezoresistive sensors, affecting everyone's daily life in applications from consumer to automotive to medical, piezoresistance has achieved this status. This presentation reviews the origins and development of piezoresistance and demonstrates the pervasiveness of embedded applications by presenting a number of typical applications that are routinely encountered in daily life.