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Abstract
Inprovement on Frequency- Shifted
Micro-Pressure Sensor Dased on PZT Thin Films
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ABSTRACT
This research consists of design, simulation and fabrication of a gas flow sensing micro pressure sensor. Commercially available bulk PZT has been used as the sensing material. The buck PZT actuator was replaced by PZT thin films. The purpose of this study is to develop a high-sensitivity, micro pressure sensors based on MEMS technology.
Subsequently, deep-reactive-chemical-vapor-ion-etching (DRIE) and KOH wet etching procedures were employed, to backside-each silicon wafer and the diaphragm ,respectively.
Ansys simulation suggested the first resoname for this pressure sensor is 11.37 kHz, while the experimental result appeared at 10.87 kHz; the sensitivity of the pressure sensor was 117.98Hz/psi experimentally. In this study, the objective is to develop a feed–back system for sensing air pressure variation. In the future, this pressure sensor could apply to factory safety system and detecting pernicious gas leakage.
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