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(54) **PIEZOELECTRIC ACOUSTIC RESONATOR MANUFACTURED WITH PIEZOELECTRIC THIN FILM TRANSFER PROCESS**

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(57) **ABSTRACT**

A method and structure for a transfer process for an acoustic resonator device. In an example, a bulk acoustic wave resonator (BAWR) with an air reflection cavity is formed. A piezoelectric thin film is grown on a crystalline substrate. One or more patterned electrodes are deposited on the surface of the piezoelectric film. An etched sacrificial layer is deposited over the one or more electrodes and a planarized support layer is deposited over the sacrificial layer. The support layer is etched to form one or more cavities overlying the electrodes to expose the sacrificial layer. The sacrificial layer is etched to release the cavities around the electrodes. Then, a cap layer is fusion bonded to the support layer to enclose the electrodes in the support layer cavities.