다결정 3C-SiC 마이크로 공진기 제작과 그 특성

이태원, 정귀상*
울산대학교 전기전자정보시스템공학부

Fabrication and characterization of polycrystalline 3C-SiC mocro-resonators

Tae-Won Lee, Gwiy-Sang Chung*
School of Electrical Eng., University of Ulsan

Abstract : This paper describes the resonant characteristics of polycrystalline SiC micro resonators. The 1 ㎛ thick polycrystalline 3C-SiC cantilevers with different lengths were fabricated using a surface micromachining technique. Polycrystalline 3C-SiC micro resonators were actuated by piezoelectric element and their fundamental resonance was measured by a laser vibrometer in vacuum at room temperature. For the 100 ~ 40 ㎛ long cantilevers, the fundamental frequency appeared at 147.2 ㎑ - 856.3 ㎑. The 100 ㎛ and 80 ㎛ long cantilevers have second mode resonant frequency at 857.5 ㎑ and 1.14 ㎒. Therefore, polycrystalline 3C-SiC micro resonators are suitable for RF MEMS devices and bio/chemical sensor applications.

Key Words : Polycrystalline 3C-SiC, micro resonator, cantilever