

폴리우레탄 감지막에 의한 표면탄성파 가스 센서의 감지능 향상

유범근, 박용욱*, 최두진**, 김현재, 김진상, 윤석진
한국과학기술연구원, 남서울대학교*, 연세대학교**

Improved sensitivity of surface acoustic wave gas sensors by using polyurethane absorption layer

Beom-Keun Yoo · Yong-Wook Park* · Doo Jin Choi** · Hyun-Jai Kim · Jin-Sang Kim · Seok-Jin Yoon
Korea Institute of Science and Technology, Namseoul Univ.*, Yonsei Univ.**

Abstract : This paper presents characteristics of surface acoustic wave (SAW) gas sensor for detecting volatile gases such as ethanol gas by measuring phase shift of output signal. A delay-line with a center frequency of 400MHz was fabricated on 128° Y-Z LiNbO₃ substrates. Experimental results, which show the phase change of output signal under the absorption of volatile gas on sensor surface, were presented. The sensitivities of SAW delay lines coated with polyurethane films are greatly increased compared to those for uncoated devices. This SAW gas sensor system may be well suited for a high sensitivity electronic nose system.

Key Words : SAW, LiNbO₃, gas sensor, phase shift, electronic nose