

A-plane GaN diodes for hydrogen sensing

김현웅, 방민지, 장수환*
단국대학교 화학공학과
(jangmountain@dankook.ac.kr*)

Hydrogen is one of the most promising pollution-free alternative energy sources. However, energy conversion technology using hydrogen is still at research stage due to the possibility of explosion in the air even though it is almost matured in the respect of scientific technology. It is very important to detect low concentration of hydrogen promptly without false alarm in that it can promote the use of hydrogen energy to daily life applications.

In this work, we fabricated the non-polar a-plane GaN hydrogen sensor and characterize the hydrogen responsivities in the various condition of environment. The sensitivity of the a-plane GaN device was dramatically improved compared to conventional c-plane GaN sensor. It also showed rapid response and good repeatability in its current change to repeated introductions of 4% hydrogen into the ambient.