

### Study on the novel surface modification of ZnO nanowire FET for pH sensor application

Mehtab Muhammad, 김진태, 김정수, 지건구, 임연호<sup>†</sup>  
전북대학교  
(yeonhoim@jbnu.ac.kr<sup>†</sup>)

In recent years, the importance of detecting ions/molecules based on the ion-sensitive field-effect transistor (ISFET) has driven the researchers toward more sensitive and robust pH sensors application. Despite all the initial challenges to commercialize this academic research, there still remains a significant challenge. In this work, we present the effective surface modification of the nanowire FET device with plasma deposition technology. The systematic experiments were performed to optimize the effective surface modification on the semiconductor nanowire device for the purpose of the improved pH sensing performance. We demonstrate our sensing platform with different pH values in terms of sensitivity and stability.