

The development of silicon nanowire as sensing material and its applications

ABSTRACT

The application of silicon nanowire (SiNW) as a sensing nanomaterial for detection of biological and chemical species has gained attention due to its unique properties. In this review, a short description is also demonstrated on the synthesis techniques of SiNWs and recent progress on sensor development based on electrochemical methods, fluorescence field-effect transistors (FET), and surface-enhanced Raman scattering (SERS) spectroscopy. We also discussed the challenges of SiNW-based sensors in the future.

Keyword: Silicon nanowire; Chemical detection; Sensor.