Special Issue

Silicon Nanowires Based Sensors and Devices

Message from the Guest Editors

The objective of this Special Issue is to provide an overview of the state-of-the-art, results, and latest advances in research and technological developments on silicon nanowire-based sensors. Silicon nanowires provide unique advantages for developing sensors in several respects. In particular, they can act as potential functional probes due to their unique properties. Their one-dimensional structure offers the smallest confinement for carrier transport along the longitudinal direction, and their high surface-to-volume ratio can promote detection phenomena to improve sensitivity. Silicon material offers compatibility for surface functionalization and is compatible with gas or liquid media. Then, the use of silicon nanowires as sensitive units offers large application areas covering mechanical probing, gas detection, chemical sensing, bio-elements recognition, dosing, and microfluidic integration.

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