

In-situ Growth and Nanoparticle Decoration of Nanowires

Applications

- Gas sensing
- Biosensor

Problem & Solution

Nanoparticle-decorated nanowires can be utilized in a wide variety of complementary metal-oxide silicon (CMOS) devices, such as gas and bio sensors. However, current methods to make these devices generate contamination that blocks interface contact area between the nanoparticle and the nanowire, resulting in decreased sensitivity of the sensor.

Nanowires are decorated with nanoparticles in a CMOS friendly atmosphere capable of reducing contamination and improving sensor performance. A wide variety of nanoparticles can be selected and deposited depending on the desired properties and application. As an example, gold nanoparticles can be selected to enable sensing of biomolecules, such as specific proteins via anchored antibodies.

Benefits

- Contamination free decoration
- Deposition of a wide variety nanoparticles
- Scalable and CMOS compatible

Patent Pending

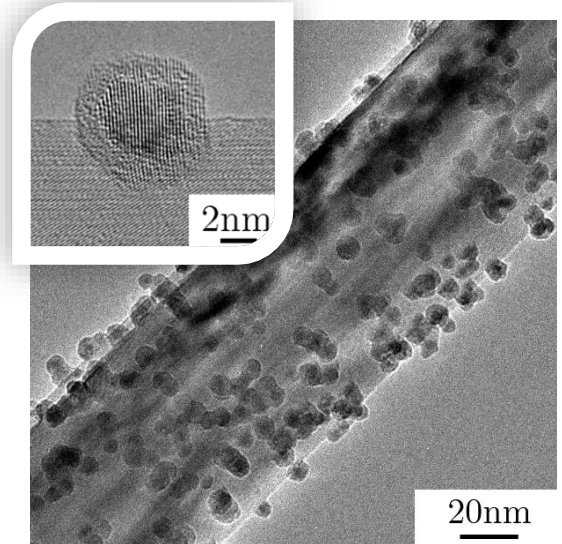
Keywords

In-situ growth, catalytic nanoparticles, contamination free, CMOS

For more information

Business Development/Technology Licensing Section

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CuO nanowire grown in situ and decorated with catalytic nanoparticles. Inset showing the quality of the interface between the wire and a one bi-metallic nanoparticle.