

Nanocrystallization of Amorphous Silicon Quantum Dots

Applications

- Hydrogen storage
- Multimodal bio-imaging
- Optoelectronic devices
- Biosensors

Problem & Solution

The crystallinity of a nanoparticle has a profound effect on its optical, electronic and chemical properties. Being able to control these properties is particularly important for advanced applications. This technology makes it possible to control the number of metallic nanoclusters decorating a metalloid nanoparticle. The nanoclusters induce localized crystallization of the metalloid quantum dot.

Benefits

- Applicable to Ag, Al, Au, Ni, Pd, Cu
- Applicable to Si, Ge, SiGe QDs
- Number of nanoclusters controllable
- Metallic nanoclusters can be removed

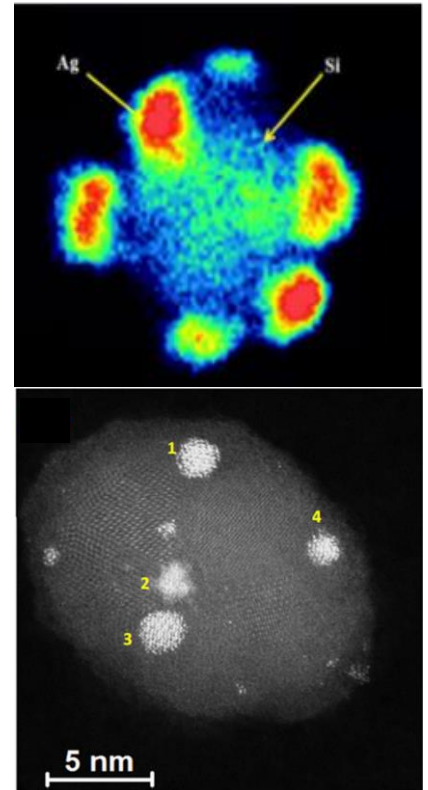
Patent Granted

Keywords

Quantum dot, nano-crystallinity, metal induced crystallization, property engineering

For more information

Business Development/Technology Licensing Section
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TEM images showing Ag nanoclusters on Si quantum dot, and crystallinity around four Ag nanoclusters.