

Oxide-based Nanostructures: Methods of Fabrication and Applications

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Status:

Seeking R&D and/or
licensing partner

Patent Pending

Inventor:

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Metallurgical and
Materials Engineering

Oxide-Based Nanonstructures:

- Current methods use precious metals
 - TiO₂-based photocatalysts
 - Expensive and rare
- Need for a simple and cheap photocatalyst
- CuO-Co₃O₄-based nanowire heterostructures
 - Controlled morphology, interface and phase-purity
 - Treated by sputtering and subsequent air annealing
 - Visible/UV light activation of ceramic oxide nanowire heterostructures

Advantages of Oxide-Based Nanonstructures:

- Well-controlled architecture
- Universal fabrication technique that occurs in dry environment
- Substrate can be reused
 - Reduces cost of production
- Oxides are active in a broad range of wavelengths
 - Large band gap allows for various applications
- Degrade organic applications

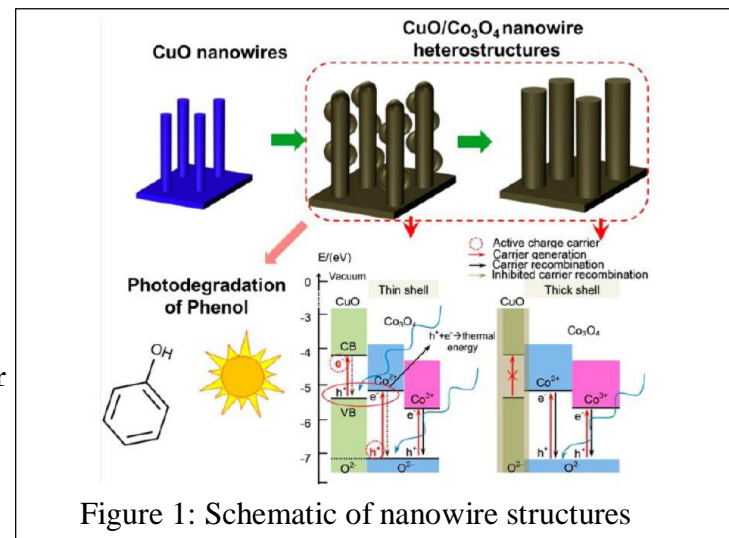


Figure 1: Schematic of nanowire structures

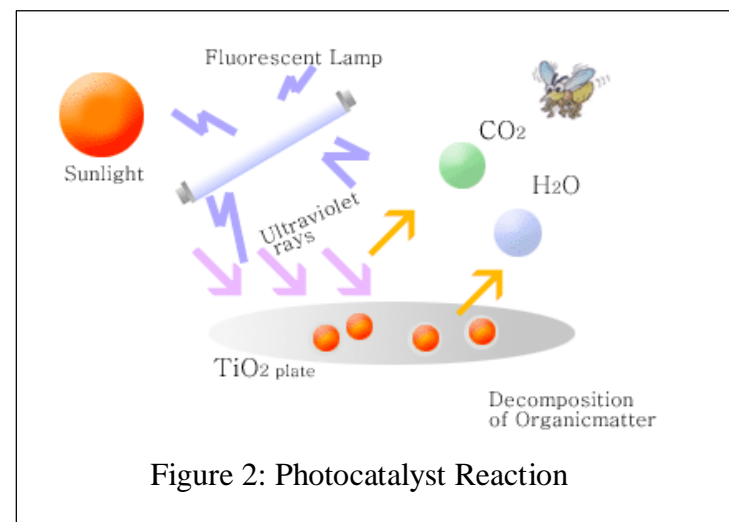


Figure 2: Photocatalyst Reaction

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