

Title of the invention:

Method of depositing metal nanoparticles on the surface of semiconductor materials and surface obtained by this process

Inventors:

J. C. Colmenares Quintero, A. Magdziarz

Field:

Chemistry new materials, Chemical technology, Environmental chemistry

Summary:

The present invention is a method of depositing metal nanoparticles, especially mono- and bimetallic nanoparticles on semiconductor materials, using the synergistic effect of ultrasound and ultraviolet radiation. The invention also includes the surface of the semiconductor material covered with metallic nanoparticles, especially mono- or bimetallic ones, obtained by this procedure.

Advantages / innovative aspects:

- Very short time of different metals' nanoparticles supported onto semiconductor surface.
- This method allows the synthesis of hybrid materials with very good metals distribution on the surface of any type of semiconductor.
- Through this method it is possible to prepare supported alloys with very good degree of metals miscibility.
- This method takes use of the synergetic effect of two low-rate invasive energy sources (sonication and photons energy).

Keywords:

Catalysts, ultrasounds, light energy, mono- and bimetallic semiconductor films, photoactive materials

Use:

Micro and Nanotechnologies, Electronic nanoengineering, Environment, Semiconductors

State of the progress:

stage of research

Intellectual property rights:

Patent application P-401693 - 20.11.2012 - Poland

Expected cooperation:

contract of sale, licence agreement, cooperation agreement