



## TECHNOLOGY

# Electrostatic-Directed Deposition of Nanoparticles on a Field Generating Substrates

## OVERVIEW

Functional nanoparticles are being considered the building blocks of potential micro and nano-scale electronic, optoelectronic devices and gas sensors. Fabrication of nanoparticle-based devices would require accurate alignment of nanoparticles in specific locations.

Methods for aligning nano-particles with an electric field in a charge-patterned substrate are known. However, the gas-phase patterning of nanoparticles on a charge-patterned substrate is difficult because i) the charge patterns are relatively unstable and change during the deposition process, ii) the metal-coated polymer stamp is easily damaged in the charging process, and iii) the necessity of using an insulated surface on the substrate limits its application especially on metal-semiconductor devices.

Researchers at the University of Maryland have developed a new assembly method to position nanoparticles deposited from the gas phase onto substrates using the electrostatic force generated by biased p-n junction substrates.

For more information or for licensing details, please contact the University of Maryland Office of Technology Commercialization, 301 405 3947 or by e-mail, [otc@umd.edu](mailto:otc@umd.edu).

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## Additional Information

### INSTITUTION

University of Maryland, College Park

### PATENT STATUS

Patent(s) pending

### LICENSE STATUS

Contact OTC for licensing information

## **CATEGORIES**

- Nanotechnology + Nanoparticles + Nanomaterials

## **EXTERNAL RESOURCES**

- [US Patent 7,781,350](#)

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