



TECHNOLOGY

Nano Arrays for Sensors

OVERVIEW

Researchers at the University of Maryland's Institute for Systems Research in the Department of Electrical and Computer Engineering have demonstrated the first utilization of virus molecules as a nano-scale bio-template assembled on an electrochemical sensor. The integration of versatile and inexpensive biological Tobacco Mosaic Virus (TMV) as a high aspect ratio, low foot print, low cost, easy to genetically functionalize nano-structured 3D scaffold for the synthesis of novel multifunctional electrodes with an increased surface area result in higher electrochemical currents, better signal-to-noise ratios and improved sensitivity when incorporated into sensors. The results are an increased signal by a magnitude of 8 and a 9.5 times improved sensing performance.

Applications:

- Electrochemical sensors
- Printed electronics
- Electrochemical analysis
- Flexible chips

Features:

- High aspect ratio, low foot print, low cost, easy to genetically functionalize, nano-structured 3D template for the synthesis of multifunctional electrodes with and increased surface area
- Nano arrays resulting in higher electrochemical currents, better signal-to-noise ratio and improved sensitivity when incorporated into electrochemical sensors
- Bottom-up self-assembled nano-structured template

Advantages:

- Allow for low cost, rapid and sensitive sensors
- Increased electrochemical signal, higher signal-to-noise ratio and improved sensing performance

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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

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