



Structure and method for a graphene-based dielectrophoresis sensor

A graphene-based device for the targeted capture and analysis of biomolecules of interest

IP Status: Issued US and Foreign Patents; US Patent No. 12,325,031

Applications

- Food Safety Testing
- Diagnostic Testing
- Biosensing

Technology Overview

Commonly used test methods for pathogenic bacterial DNA involve culture and/or polymerase chain reaction (PCR) analysis, which are time-consuming and costly. A particularly promising method of DNA detection for hand-held systems involves the use of graphene-based sensors due to their sensitivity, however, this approach remains slow due to the reliance on simple diffusion to bring target molecules to the sensing surface. Researchers at the University of Minnesota have developed a dielectrophoresis-based sensor to attract particles to the graphene surface and isolate the sensing voltage from the DEP-attraction voltage for sensitive detection.

Phase of Development

TRL: 5

Prototype developed

Desired Partnerships

This technology is now available for:

- License
- Sponsored research
- Co-development

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Researchers

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Technology ID

20180387

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