Electronic biosensor platform

A sensor comprising an electronic circuit electrically coupled to a type III-V semiconductor material, for example indium arsenide (InAs) and an antibody contacting the type III-V semiconductor material. The sensor produces measurable changes in the electrical properties of the semiconductor upon antibody-antigen binding events. Electrical properties measurable by the electronic device may include resistivity, capacitance, impedance, and inductance. A method of detecting an antigen using sensors of the invention. A method of detecting a reaction of an analyte to a stimulus using sensors of the invention. Sensor arrays comprising multiple sensors of the invention.

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Inventor(s)

- Brown, April
- Angelo, Robert
- Lampert, William
- Wolter, Scott

College

Pratt School of Engineering

For more information please contact

Koi, Bethany
919-681-7552
bethany.koi@duke.edu