APPARATUS AND METHOD FOR 2D-BASED OPTOELECTRONIC IMAGING

Tech ID: 25733 / UC Case 2016-127-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,782,233	09/22/2020	2016-127

BRIEF DESCRIPTION

The use of electric fields for signaling and manipulation is widespread, mediating systems spanning the action potentials of neuron and cardiac cells to battery technologies and lab-on-a-chip devices. Current FET- and dye-based techniques to detect electric field effects are systematically difficult to scale, costly, or perturbative. Researchers at the University of California Berkeley have developed an optical detection platform, based on the unique optoelectronic properties of two-dimensional materials that permits high-resolution imaging of electric fields, voltage, acidity, strain and bioelectric action potentials across a wide field-of-view.

SUGGESTED USES

- Low-cost and high-throughput drug screening for cardiac and neuronal research and therapy
- Chemical and physical analysis for microfluidics / lab-on-a-chip point-of-care diagnostics
- Battery technologies

ADVANTAGES

- Simultaneously high spatial, voltaic, and temporal resolutions
- Large-scale parallel imaging of electric fields, voltage, acidity, strain, and bioelectric dynamics
- Compatible with simultaneous, complementary microscopy measurements
- Operates under a wide range of chemical and thermal conditions
- Compatible with the standard fabrication techniques
- Proven detection capabilities

RELATED MATERIALS

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OTHER INFORMATION

CATEGORIZED AS

» **Optics and Photonics**
» All Optics and Photonics
» **Environment**
» Sensing
» **Imaging**
» Other
» **Semiconductors**
» Design and Fabrication
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