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3D printed bionic skull for multimodal neural sensing

Technology No. 2019-293

Applications

- Neurotechnology / Neuroscience

Technology Overview

Practical technologies that enable simultaneous mapping of neuronal activities from large brain volumes at cellular resolution currently do not exist. Researchers at the University of Minnesota have conceptualized a transparent bionic skull for volumetric mapping of single-cell neuronal activities of up to a 45 sq mm area in cortex of a freely moving mouse at physiologically relevant temporal resolution. The bionic skull design includes optical instrumentation for high resolution imaging and sensors to track ultra-fast genetically encoded voltage indicators.

Phase of Development

TRL: 2-3
Concept. Prototype under development.

Researchers

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