

Video Article

# Acquisition of High-density EEG in Mouse Model with Polyimide Based Microelectrode Array (PBM-array)

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## Abstract

Electroencephalogram (EEG) indicates the averaged electrical activity of the neuronal populations on a large-scale level. It is widely utilized as a noninvasive brain monitoring method in cognitive science as well as a diagnostic tool for epilepsy and sleep disorders in neurology. Application of high-density EEG recordings enables the investigation of topographic changes of rhythmic or event related brain activities. In this article, the surgery and recording procedure for acquisition of high density EEG in mouse model is presented. The size issue of a mouse brain was solved by introducing flexible polyimide based microelectrode array (PBM-array) with a bifurcated structure. The PBM-array presented in this article has 40 channels of electrical contacts delivering high density electrode montages for mouse EEG. The PBM-array was designed to fit on the mouse skull and has an embedded connector for easy plug-in and out for connection in chronic applications. In the presented video, the preparation and surgery steps for the implantation of PBM-array on a mouse skull are described step by step. The recording setup for signal acquisition is also presented.

## Disclosures

No conflicts of interest declared.