

Experimental Procedures for Multi-channel Fiber Optics



Overview

Here, we report the development of the multi-channel fiber photometry system to simultaneously monitor neural activities in several brain areas of an animal or in different animals. Learning and memory depend on neural channels. Optical fibers have proven to be an ideal candidate for distributing quantum states. Thus, today's efforts address overcoming issues towards high data transmission and long-distance implementations.



Experimental Procedures for Multi-channel Fiber Optics



This paper presents a novel design methodology for simultaneous multi-channel fiber optic current sensor. It integrates additional sensing channels into a stand



Here we present compact, chronically implantable, high-density arrays of optical fibers that enable multi-fiber photometry and optogenetic perturbations across many regions in the ...



Multi-channel fiber photometry recording NOTE: To ensure stable and full expression of the two calcium indicators, multi-channel fiber optic photometry was performed three weeks after the ...



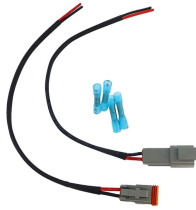
In combination with a multi-color light source and appropriate optical filters, our approach offers remarkable flexibility in experimental design and facilitates the exploration of new molecular ...



The current protocol focuses on our procedures of multi-fiber array assembly, surgical implantation, and recording. While we have chosen mice as our animal model, these methods can be ...



In combination with a multi-color light source and appropriate optical filters, our approach offers remarkable flexibility in experimental design and ...



Fiber photometry has become increasingly popular among neuroscientists as a convenient tool for the recording of genetically defined neuronal population in behaving animals. Here, we report the ...



We provide a detailed description and construction guidelines of high-density fiber array implants, including step-by-step surgical procedures for implantation and extraction. We describe several types ...



implementations. Here, we experimentally demonstrate the secret key rate enhancement via space-division multiplexing using a . ulticore fiber. Our multiplex-ing technique exploits the ...



In the following decades, scientists continued to explore and investigate multi-core optical fibers from theoretical, fabrication, and application aspects, and some noteworthy advances have ...



We present a system for optical experiments and rapid prototyping of fiber optical devices. The platform has real-time FPGA functionality combined with the ease of programming on LabVIEW.

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