عنوان مقاله:

Simulation of a Fabrication Method for Micro-Electrode Arraysby MEMS Technology

محل انتشار:

اولین کنفرانس ملی مهندسی برق دانشگاه آزاد اسلامی واحد لنگرود (سال: 1393)

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خلاصه مقاله:

In this paper, some primitive and simple steps of micro electro-mechanical system (MEMS) process andtechnology are implemented to introduce an efficient method toward fabricating a specific biomedicalpenetrating microelectrode arrays (MEA) by FemLab Software simulation. Penetrating MEA may beemployed in interface of nervous system. It can be implanted beneath a nerve tissue to record the neuralsignal for external process or to stimulate a nerve externally for research or treatment applications. In order toachieve maximum yield and signal to noise ratio, an optimum design for MEA has been proposed andinvestigated by simulations. The different initial sources may be considered of recorded nerve signal that isproduced by numeral evokes or action potential that originated from individual axons through an electrode.Improving these primitive sources in its turn may lead us to the anatomic originations of a nerve signalwhich will give us distinguished anticipation in neural renovation. Hence, clinical interests may be advancedextraction of sensory and motor components of the nerve signals in neural injuries. One prominent .case is toderive sensory fraction in sacral nerve to sense the bladder filling up in paraplegic or quadriplegic people

کلمات کلیدی:

Biomedical Interfacing, Fabrication Method, penetrating, MEMS