Special Issue

Neural Microelectrodes: Design and Applications

Message from the Guest Editors

Neural electrodes enable the recording and stimulation of bioelectrical activity from the nervous system. This technology provides neuroscientists with the means to probe the functionality of neural circuitry in both health and disease. In addition, neural electrodes can deliver therapeutic stimulation for the relief of debilitating symptoms associated with neurological disorders such as Parkinson's Disease and may serve as the basis for the restoration of sensory perception through peripheral nerve and brain regions after disease or injury. Lastly, microscale neural electrodes recording signals associated with volitional movement in paralyzed individuals can be decoded for controlling external devices, prosthetic limbs, or driving the stimulation of paralyzed muscles for functional movements. This Special Issue will address the state-of-the-art knowledge and emerging opportunities for the development and demonstration of advanced neural electrodes.

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