

Dielectrophoretic Neuron Positioning on MEAs in Semiconductor Chips for the Extracellular Detection of the Neuronal Network Activity.

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Abstract: *Biological cells are more or less homogeneously distributed when seeded on a sensor chip. Different methods can be applied when artificial substrates are used to stimulate cell growth in a predetermined way. Such methods are applied to single cells, cell aggregates or cell networks. One can use photolithography or, more easily, dielectrophoresis to allocate cells to specific adhesive sites or to electrically conducting structures. Here, we present silicon chips containing an array of plane microelectrodes for the measurement of extracellular potentials from neurons. The same electrodes are used for dielectrophoretic cell allocation.*

Universität
Rostock



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