

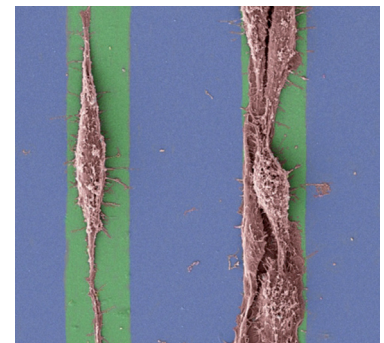
BINAGO

Biosensor Nanoelectrodes of Graphene or reduced Graphene-Oxide

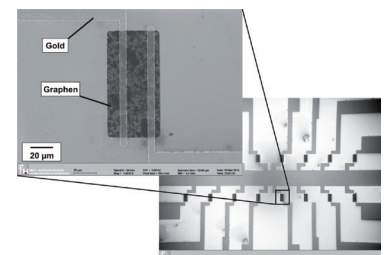
Graphene – a monolayer of graphite – is regarded as the material of the future. This new material has recently been selected by the European Commission as one of the two EU “flagship”-projects and will be generously funded until 2020. In the context of BINAGO, different types of graphene- based biosensors will be developed for various applications in the field of biosensing.

The primary goal is to transfer graphene oxide (GO) monolayers in large scale to silicon or glass substrates for subsequent processing into various biosensors. One example are ribbons, which are strips of different widths in the micro and nano scale, which are structured through a recently established nanoimprint lithography process. This preparation is incorporated into an overall process, to produce different types of sensors.

On the one hand, biosensors will be developed for the detection of biomolecules (DNA and antigen/antibody) and tested in “proof-of-principle” experiments for point of care diagnostics. On the other hand, graphene based biosensors will be developed for the electrical readout of cell cultures.



Alignment of HEK293 cells on graphene structures.



Wafer-scale fabricated 4x4 sensor array of graphene oxide.

Project duration:

01/01/2014 – 31/12/2016

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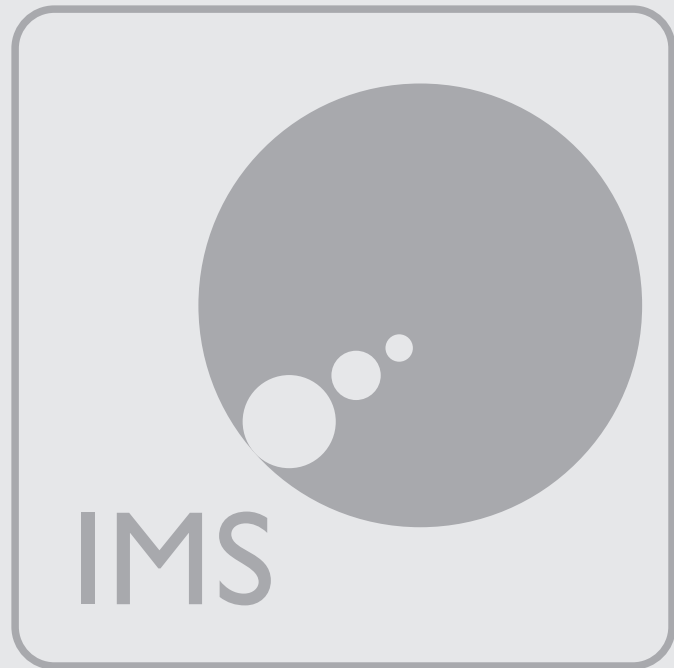
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