



GRAPHENE FLAGSHIP

GRAPHENE CONNECT

Biomedical Technologies

Thursday, 16 November 2017, 10:15-17:15
taking place during MEDICA/COMPAMED trade fair

**Messe Düsseldorf, Stockumer Kirchstraße 61,
40474 Düsseldorf, Germany, Hall 8b, Room 814 A**



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WELCOME



Dear participant

Welcome to the Graphene Connect workshop on Biomedical Technologies, held in Düsseldorf during the MEDICA/COMPANED trade fair.

The aim of the workshop is to create a platform for industry and academia to meet and share the latest Graphene Flagship research, an insight to industry demands in this field and to find collaboration partners for new projects.

As a participant you will not only learn more about graphene biomedical applications but also build new R&D contacts that could be the starting point for future graphene innovation projects.

The workshop features four guest speakers of leading brands and will cover opportunities and challenges in biosensors, implants and wearable technologies to guide you into the future. Besides listening to hands-on experience from leading brands, you will engage in group discussion tailored to your needs and interests.

We will all prosper from open vivid discussions, and hope you take an active part in this with us.

Looking forward to meeting you!

Johan Ek Weis and *Sophie Charpentier*
Representatives of the Graphene Flagship Innovation team



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PROGRAMME

GRAPHENE CONNECT WORKSHOP

GRAPHENE BIOMEDICAL TECHNOLOGIES

Taking place during MEDICA/COMPAMED trade fair

Thursday 16 November 2017, 10:15-17:15, Messe Düsseldorf, Stockumer Kirchstraße 61, 40474 Düsseldorf, Germany, hall 8b, room 814 A

10:15-10:30 Welcome talk

Speaker: Kari Hjelt, Head of Innovation, Graphene Flagship

10:30-12:30 Session 1: Graphene in Biosensors

Title: Graphene-based platforms for biosensing applications

Speaker: Arben Merkoci, ICN2

Chair: Sanna Arpiainen, VTT Technical Research Centre of Finland

Round table discussions

Summary and way forward

12:30-12:50 Coffee/ small snacks

12:50-14:50 Session 2: Electroceuticals; Graphene in Implants

Title: Graphene in Bioelectronic Medicine

Speaker: Daniel Chew, Galvani Bioelectronics

Chair: Kostas Kostarelos, The University of Manchester

Round-table discussion

Summary and way forward

14:50-15:10 Coffee/ small snacks

15:10 – 17:10 Session 3: e-Health and Wearable Technologies

Title: Graphene Technologies for Nokia's Digital Health Ecosystem

Speaker: Matteo Bruna, NOKIA

Chair: Jose Garrido, ICN2

Round-table discussion

Summary and way forward



SPEAKERS

Arben Merkoçi

ICREA Professor and director of the Nanobioelectronics & Biosensors Group at Institut Català de Nanociència i Nanotecnologia (ICN2), Spain

Prof. Merkoçi research is focused on the design and application of cutting edge nanotechnology and nanoscience based cost/efficient biosensors. The paper/plastic-based nanobiosensors involve integration of biological molecules (DNA, antibodies, cells and enzymes) and other (bio)receptors with micro- and nanostructures/motors and applied in diagnostics, environmental monitoring or safety and security.



Daniel Chew

Leader of the neural Interfacing and pre-clinical efforts at the UK R&D site of GALVANI

The Galvani Bioelectronics R&D effort is focused on assessing early stage feasibility of autonomic nervous system neuromodulation, across a pipeline of disease indications. Work centres around exploring the fundamentals of nerve physiology, electrode design, pre-clinical models, computational modelling, and optimising ways to interact with the mammalian anatomy. This involves the pursuit of *in silico*, *ex vivo*, and *in vivo* electrophysiology methods, while driving the process of development of mechanically and electrically compliant neural interfaces for patients.



Matteo Bruna

Head of research department at Nokia-Bell Labs in Cambridge, UK

Matteo Bruna is heading a team of electronic engineers, material scientists and physicists working towards the development of innovative products in the fields of IoT, wearables and digital health. The team's R&D efforts are focussed at using new materials for the development of components and devices, alongside new services and data analytics, to enable innovative products aimed at improving people's health, wellbeing management and explore new forms of extended awareness and communication.



CHAIRS

Sanna Arpiainen

Senior Scientist at VTT, Finland

Sanna Arpiainen is a Senior Scientist at the Technical Research Centre of Finland Ltd, in the research area of Sensing and Integration. She is focused on the applications of graphene and other layered 2D materials in the fields of sensing and flexible electronics. She is the Deputy Head of the work package Sensors of the Graphene Flagship



Kostas Kostarelos

Professor of Nanomedicine at the University of Manchester, UK

Kostas Kostarelos is Professor of Nanomedicine at the University of Manchester at the Institute of Inflammation and Repair. His research focuses on preclinical development of nanomedicine constructs based on novel nanomaterials of synthetic and biological nature. Kostarelos is also Head of the work package Biomedical Technologies of the Graphene Flagship.



Jose Antonio Garrido

ICREA research professor at ICN2, Spain

Jose Antonio Garrido is an ICREA research professor and leader of the ICN2 Advanced Electronic Materials and Devices Group, which explores novel electronic materials, such as graphene and other 2D materials, and their potential in electronic and bioelectronic applications.

Jose A. Garrido is an editor for the journal Diamond and Related Materials and co-coordinator of the biomedical technologies work package for the European Graphene Flagship initiative.





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**THANK
YOU!**



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