

BIST Graphene Open Day

The Institute of Photonic Sciences (ICFO) - May 16, 2018

Programme

9:00 Registration and coffee

9:30 Welcome (BIST, ICFO)

9:45 Goals and challenges

12:30 Visit to labs

13:30 Networking lunch

14:30 Parallel sessions

1.- Sensors and medical applications

Keywords: Flexible devices, Sensors, Medical sensors, Photodetectors, Imaging systems...

Moderators: Jose Antonia Garrido (ICN2) and Frank Koppens (ICIQ)

2.- Energy and catalysis

Keywords: Thermal applications, Energy, Catalysis...

Moderators: Pedro Gómez (ICN2) and Miquel A. Pericàs (ICIQ)

3.- Fundamental topics

Keywords: heterostructures, quantum simulation, quantum materials, artificial materials, collective phenomena...

Moderators: Dmitri Efetov and Stephan Roche

16:00 Conclusions from parallel sessions

16:30 Materials, Growth, Integration, Scaling – plenary discussion

Moderators: Federico Sánchez and Stijn Goossens

17:15 Networking cocktail

18:00 End of the day

Details on the Goals and Challenges talks

Graphene and 2D materials (8-10 min)

- *ICN2 quantum simulation platform for 2D materials*
Stephan Roche (ICREA Research Professor and Leader of the ICN2 Theoretical and Computational Nanoscience Group) and **Pablo Ordejón** (CSIC Research Professor, Leader of the Theory and Simulation Group) both at ICN2
- *Opto-electronics and nano-photonics with graphene, related 2d-materials, and heterostructures*
Frank Koppens, ICREA Research Professor & Group Leader, Quantum Nano-Optoelectronics at ICFO
- *Graphene-based platforms for biosensing*
Arben Merkoçi, ICREA Research Professor and Leader of the ICN2 Nanobioelectronics and Biosensors Group at the ICN2
- *New insights into thermal transport in two-dimensional lattices*
Adrian Bachtold, ICREA Research Professor & Group Leader, Quantum NanoMechanics at ICFO
- *Two-Dimensional Materials for Spin-Electronics and Thermoelectricity*
Sergio Valenzuela, ICREA Research Professor and Leader of the Physics and Engineering of Nanoelectronic Devices Group at the ICN2
- *2D electronics for biomedical applications*
Jose Garrido, ICREA Research Professor and Leader of the Advanced Electronic Materials and Devices Group at the ICN2
- *Optical sensing using graphene plasmons*
Bruno Paulillo, Postdoctoral Researcher in Optoelectronics group at ICFO
- *Thermal conductivity of 2D materials measured with Raman thermometry*
Marianna Sledzinska, Postdoctoral Researcher at the Phononic and Photonic Nanostructures Group at the ICN2
- *Artificial graphene*
Alexandre Dauphin, Postdoctoral Researcher in the Quantum Optics Theory group at ICFO
- *Graphene and Graphene Hybrids for Energy Storage*
Pedro Gómez, CSIC Research Professor and Leader of the Novel Energy Oriented Group at the ICN2
- *Synthesis of graphene nanostructures with atomic precision: 0D Qdots, 1D nanoribbons and 2D nanoporous graphene*
Aitor Mugarza, ICREA Research Professor and Leader of the Atomic Manipulation and Spectroscopy Group at the ICN2
- *Low dimensional quantum material*
Dmitry Efetov, Group Leader at ICFO & Professor, Low-Dimensional Quantum Materials

Short presentations (5min/each) from IFAE, ICIQ and IBEC: main interests in graphene and 2D materials research and complementary / synergic lines of research being carried out at the centers