

Symposium: Beyond Graphene - Low-dimensional systems based on graphene and III-nitrides

Scope of the Symposium

Tailored low-dimensional systems based on graphene and with the possibility of integrating other 2D networks, III-Nitrides included (AlN, BN, GaN, etc), become implicit part of perceived graphene-based applications. Specifically, III-Nitrides is a material system that, besides the low-dimensional systems understood as 2D networks, accommodates low-dimensional systems in the fashion of quantum wells in epitaxial structures for optoelectronic applications. An emerging aspect of the interconnection between graphene and III-Nitrides is related to the deposition of III-Nitrides epitaxial structures on graphene-based templates. The scope of the symposium is then to advance the knowledge on graphene-like structures, III-Nitrides and other 2D systems either as individual as well as complementary systems and also in the context of their various interconnections.

Abstracts will be solicited in (but not limited to) the following areas:

- Theoretical modeling of growth, structural evolution, controllable incorporation of defects and doping of graphene;
- Tailored low-dimensional carbon-based nano-units, nano-ribbons and nano-wires, including modeling, experimental growth and functionalization;
- Theoretical modeling of growth, structural evolution, controllable incorporation of defects and doping of 2D networks beyond graphene, including III-Nitrides;
- Deposition of graphene and 2D networks beyond graphene;
- Aspects of epitaxial growth of III-Nitrides: quantum well structures and graphene templates;
- Modeling of gas-phase chemistry, surface reactions and interfaces involved in the deposition **on/of** graphene and III-Nitrides and their assembly;
- Electronic and mechanical properties of graphene, III-Nitrides and other 2D networks;
- Excited state properties (optical and magnetic) of graphene, III-Nitrides and other 2D networks.

Invited speakers:

- Prof. Sir Colin Humphries, University of Cambridge, UK (Plenary lecture)
Understanding the Science of Light Emission from III-Nitride Quantum Wells
- Prof. Rositsa Yakimova, Linköping University, Sweden
Progress and challenges in growth of graphene on SiC
- Dr. Antônio Gomes Souza Filho, Universidade Federal do Ceará, Brazil
Low dimensional carbon materials under extreme conditions
- Prof. Karin Larsson, Department of Chemistry - Ångström Laboratory, Uppsala University, Sweden
Graphene formation on diamond facets using a high temperature process under various chemical conditions



- Prof. Fernando Nogueira, University of Coimbra, Portugal;
Finite-size effects in the absorption spectra of single-wall carbon nanotubes
- Dr. Michelle Moram, Imperial College London, United Kingdom
Integration of 2D materials with III-nitrides: towards device heterostructures
- Dr. Ivan G. Ivanov, Linköping University, Sweden;
Thickness determination and quality assessment of graphene on SiC by combined Raman-reflectance mapping

Symposium Organizers:

1. Prof. Caio M.C. de Castilho

Universidade Federal da Bahia, UFBA, Brazil

2. Prof. Fernando de Brito Mota

Universidade Federal da Bahia, UFBA, Brazil

3. Prof. Gueorgui K. Gueorguiev (Associate Professor)

Linköping University, Sweden

4. Anelia Kakanakova-Georgieva (Associate Professor)

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