

Unconventional fabrication of 2D nanostructures and graphene edges Bellunato, A.

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List of publications

- Dynamic Tunnelling Junctions at the Atomic Intersection of Two Twisted Graphene Edges.
 Amedeo Bellunato, Sasha D. Vrbica, Carlos Sabater, Erik W. de Vos, Remko Fermin, Kirsten N. Kanneworff, Federica Galli, Jan M. van Ruitenbeek and Grégory F. Schneider. Nano Letters, 2018, 18(4), 2505-2510.
- Zero-Depth Interfacial Nanopore Capillaries. Hadi Arjmandi-Tash, Amedeo Bellunato, Chenyu Wen, René C. Olsthoorn, Ralph H. Scheicher, Shi-Li Zhang, and Grégory F. Schneider. Advanced Materials, 2018, 30, 1703602.
- Chemistry at the Edge of Graphene. Amedeo Bellunato, Hadi Arjmandi Tash, Yanina Cesa and Grégory F. Schneider. Chem. Phys. Chem. 2015, 17(6).
- Electrophilic Radical Coupling at the Edge of Graphene. Amedeo Bellunato and Grégory F. Schneider, Nanoscale 2018, 10, 12011-12017.
- Inert Mask Lithography of Edge Narrowed Graphene Nanoribbons with Insitu Metallic Electrodes.
 Amedeo Bellunato, Alex van der Ham, Pauline van Deursen and Grégory F. Schneider. In preparation.
- 6. Multilayered Polymeric Nanogaps Between Metallic Electrodes. Amedeo Bellunato, Clarisse de Sere, Zhanna Overchenko, Bram Koster, Sai Sankar Gupta, Pauline van Deursen and Grégory F. Schneider. In preparation.
- Implementation of Carbon Thin Film Coatings in the Super Proton Synchrotron (SPS) for Electron Cloud Mitigation. Pedro Costa Pinto, Amedeo Bellunato, Tessa Basso, Paul Edwards, Mounir Mensi, Alban Sublet and Mauro Taborelli. Proceedings of IPAC 2014, 07, T14, 2574-2576.

Curriculum Vitae

Amedeo Bellunato was born in Turin, Italy on November 30th 1987.

He attended high-schools in Monza, Italy at Liceo Scientifico Paolo Frisi, where he graduated in 2007. In that year, he enrolled to the bachelor degree in Physics Engineering at Politecnico di Milano. He graduated in 2011 after a research internship on Scanning Probe Microscopy, focusing on Magnetic Force Microscopy.

Afterwards, he received a master degree in Materials Engineering and Nanotechnology at Politecnico di Milano in 2014 after a year spent as a technical student at CERN, the European Research Centre for Nuclear Research.

At CERN, he designed and implemented an innovative carbon coating system for the stainless-steel dipoles chambers of the Super Proton Synchrotron. This work was summarized in his master thesis: "Experimental Investigation on the Electron Multipacting and the Surface Conditioning", and his first publication was published in IPAC2014 in 2014 "Implementation of Carbon Thin Film Coatings in the Super Proton Synchrotron (SPS) for Electron Cloud Mitigation".

In June 2014 he started as a PhD student in the group of dr. Grégory Schneider at the Leiden Institute of Chemistry within the Supramolecular and Biomaterials Chemistry department of Professor dr. Alexander Kros. His work focused on the unconventional nanofabrication of graphene devices for biosensing applications, such as nanopores, nanogaps and nanoribbons. His research interest focused also on the functionalization of graphene edges, aiming to tune the physical-chemical properties of graphene.

During his PhD he extensively collaborated with the Leiden Institute of Physics, particularly with the group of Prof. dr. Jan M. van Ruitenbeek, and with the Leiden University Medical center, particularly with Pr. Dr. Ir. Bram Koster. He also supervised two international bachelor students, respectively from France and Ukraine, and a master student from Leiden University.

He lectured Dutch high-school teachers about quantum mechanics in real world applications at the "quantum wereld" day organized by Leiden University. He has

been an invited speaker at the open day of Leiden Science for International students in 2016, 2017 and 2018.

Parts of the results reported in this dissertation were presented at the following meetings and conferences:

- 24-04-2018, This week discovery at Leiden University, Leiden, The Netherlands.
 Zero-depth nanopores and twisted graphene nanogaps: perspectives on the future of biosensing, talk.
- 06-12-2017, Chains 2017, Veldhoven, The Netherlands. The unconventional design of nanopore, nanogap, nanowire 2D sensors, invited talk. Multilayered molecular nanogaps, poster.
- 23-08-2017, Chem2Dmat, Strasbourg, France.
 Dynamic single carbon tunnelling nanogaps for biomolecular detection, poster.
- 28-09-2017, Graphene Week 2017, Athens, Greece.
 Chemical tools for graphene nanotechnology, talk.
 Dynamic single carbon-carbon tunnelling nanogaps for biomolecular detection, poster.
- 28-06-2017, NanotechFrance 2017, Paris, France.
 Tunable Au nanogaps via Layer-by-Layer deposition of organic fillers and thiolated polyelectrolytes, talk.
- 06-12-2016, Chains 2016, Veldhoven, The Netherlands. Stabilized aminothiols self-assembled monolayers for Layer-by-Layer deposition on gold thin films, poster.