



Seminar

DATE: 24 March 2022
TIME: 3:00 PM – 5:00 PM
LOC: Online



GUEST SPEAKER:

Prof. Francesco Bonaccorso

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TITLE:

“Large-Scale Production of 2D Crystals for Energy Applications”

ABSTRACT:

The development of industrial-scale, reliable, inexpensive production processes of graphene and related two-dimensional materials (GRMs)^[1,2] is a key requirement for their widespread use in several application areas,^[1-6] providing a balance between ease of fabrication and final product quality. In particular, in the energy sector, the production of GRMs in liquid phase^[2,6] represents a simple and cost-effective pathway towards the development of GRMs-based energy devices, presenting huge integration flexibility compared to other production methods. In this presentation, I will first briefly introduce the key properties of GRMs. Then, I will present the strategy of BeDimensional in the production of GRMs by wet-jet milling^[7] and the industrial scale up. Afterward, I will provide a brief overview on some key applications of the as-produced GRMs, for anticorrosion coatings and energy conversion and storage devices.^[3,8-16]

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PROFILE OF PROF. FRANCESCO BONACCORSO:

Francesco Bonaccorso gained the PhD from the University of Messina. In 2009, he was awarded with the Royal Society Newton International Fellowship at Cambridge University, and elected to a Research Fellowship at Hughes Hall, Cambridge, where he also obtained a MA. He is the Scientific Director of BeDimensional SpA and visiting scientist at the Istituto Italiano di Tecnologia (IIT). He was responsible in defining the science & technology roadmap for the European Graphene Flagship, being now the Deputy of Innovation. He is author of 13 patents and more than 170 publications in journals such as *Science*, *Nature Nanotechnology*, *Nature Photonics*, *Chemical Society Reviews*, *Advanced Materials*, *Nano Letters*, etc. These have been covered by several reports in the technical and general press. He has an H-index of 60 and more than 31.200 citations. He was featured as 2016 Emerging Investigator by *J. Mater. Chem. A*, and in 2019 by *ChemPlusChem*. In 2018, he was recognized as highly cited scientist by Clarivate Analytics. In 2019, he received the Magister Peloritanus by Accademia Peloritana dei Pericolanti and ExAllievi Eccellenti by the University of Messina. He co-founded two start-ups, Cambridge Graphene Ltd. and BeDimensional SpA, a Spin-off of IIT.