

Solution processed 2D crystals for energy applications

Francesco Bonaccorso

BeDimensional S.p.A., Via Lungotorrente secca 30R, Genova, Italy
Graphene Labs, Istituto Italiano di Tecnologia, via Morego 30, Genova, Italy
f.bonaccorso@bedimensional.it

Abstract

Solution processing represents an appealing industrially scalable, reliable, inexpensive production processes of graphene and related two-dimensional materials (GRMs).[1,2] These are key requirements for the widespread use of GRMs 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 by liquid phase exfoliation [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 talk, I will first present our strategy to produce GRMs on large scale by wet-jet milling [7] of their bulk counterparts and their characterization following the international standard protocol and then an overview of their applications for energy conversion and storage devices. [3,8-18]

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