

## A novel high-performance graphene fabrication method

Researchers from the Spanish National Research Council (CSIC) and the Catalan Institute of Nanoscience and Nanotechnology (ICN2-BIST) have recently developed a novel electrochemical reactor and procedure to fabricate graphene. This method has been proved as prototype and shows high performance and fine tuning of the graphene oxidation.

Graphene producers are being sought to collaborate and/or exploit the existing know-how through a patent license agreement.

### *An offer for Patent Licensing*

#### High performance process for the fabrication of graphene by electrochemical exfoliation of graphite

The novel technology based on electrochemical exfoliation of graphite (even powder) permits the fabrication of graphene in high yield. Through the novel cell design of an electrochemical reactor and a simple procedure a fine tuning of the oxidation degree of the graphene sheet is performed. This method allows the fabrication of high-quality-graphene suitable for many current and potential graphene applications in which the control of its oxidation degree plays an important role.

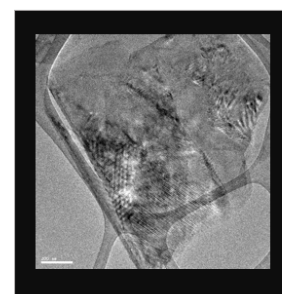


Fig 1.) Image of a high-quality-graphene sheet obtained by the novel method. It could be appreciated the MOIRE diagram which proof the high crystallinity (no defects) of the product.

#### Main innovations and advantages

- Controllable graphene oxidation, from a high quality product (no defect neither oxygen content) to a high oxidation product like reduced graphene oxide (rGO) or even Graphite Oxide (GO).
- High quality of the graphene sheets in comparison with current fabrication methods except Chemical Vapor Deposition (CVD).
- High efficiency versus other current electrochemical fabrication methods.
- Easily scalable and modular.
- Low energy consumption, low voltages and time compared with other methods.
- Low cost product of the raw material, special carbon electrodes are not needed.
- Side products generated can be used again in the reactor without any kind of treatment.

#### Patent Status

Priority patent application filed suitable for international extension

#### For more information, please contact:

Isabel Gavilanes-Pérez, PhD.

Deputy Vice-Presidency for Knowledge Transfer.

Spanish National Research Council (CSIC)

Tel.: +34 – 93 594 77 00  
Fax: +34 – 93 580 14 96

E-mail: [isabel.gavilanes@csic.es](mailto:isabel.gavilanes@csic.es)  
[comercializacion@csic.es](mailto:comercializacion@csic.es)