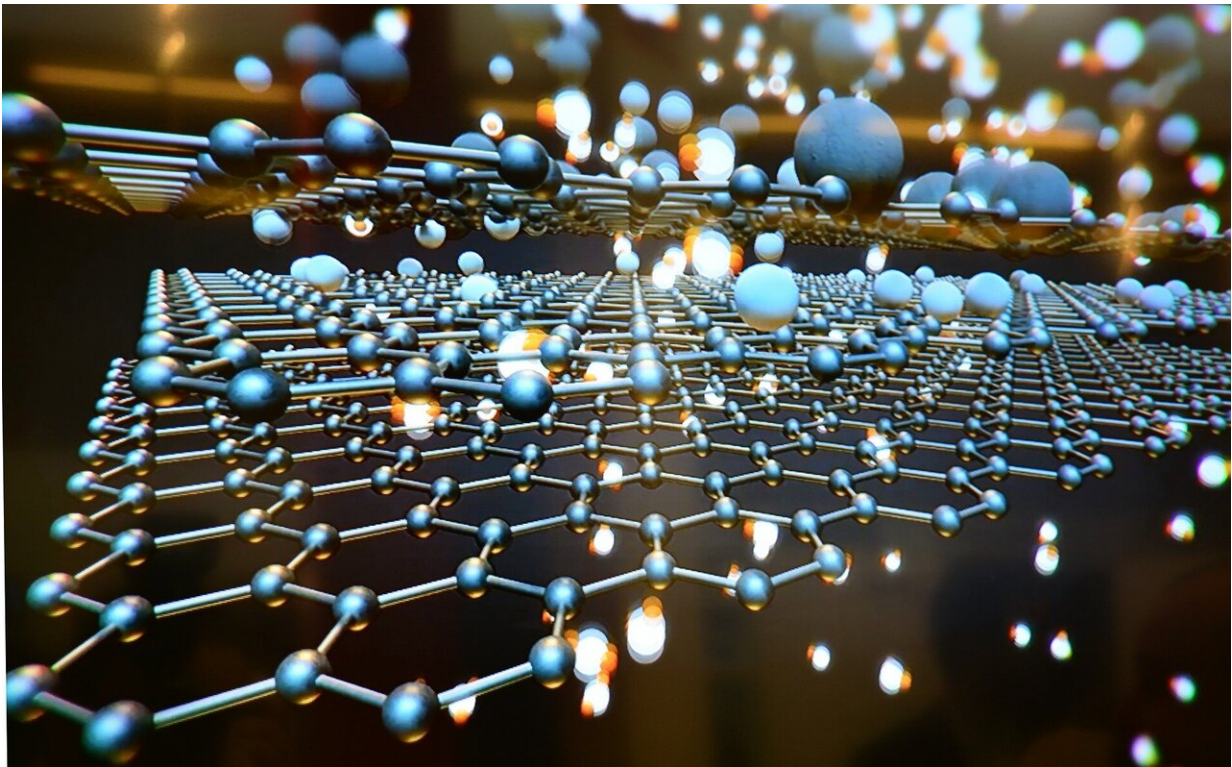


# Handbook of graphene manufacturing published

January 29 2020

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Encompassing more than 1,500 references and the knowledge of 70 co-authors from EU-funded Graphene Flagship partners and associate members, the article aims to provide a single source of knowledge on graphene and related layered materials (GRMs).

Graphene is already being used in many commercial applications, with numerous new products on the horizon. However, lack of information on the correct preparation and processing is hindering its uptake. To tackle this challenge, Graphene Flagship researchers have produced a comprehensive guide entitled "Production and Processing of Graphene and Related Materials," which has just been published by IOP Publishing in their journal *2-D Materials*. The article is published under an open access licence, which makes it free to read for everyone who is interested and, moreover, removes all restrictions on use and reuse.

The article condenses the knowledge acquired and developed by the Graphene Flagship over the past six years. With this publication, the Graphene Flagship will make this knowledge public as part of its long-term goal to assist in the development of [graphene](#) and related layered materials.

Andrea C. Ferrari, Graphene Flagship Science and Technology Officer stated: "Graphene Flagship researchers have already shown that at least 1,800 different layered materials exist—and only a handful of those have been investigated to date. This authoritative guide will help researchers in academia and industry plan their large scale and reproducible production of graphene, drawing from the experience developed with graphene itself."

The article provides a comprehensive guide on the techniques for production and processing GRMs, as well as the key characterisation procedures. It is aimed both at expert academics and beginners, as well as companies that would like to experiment with GRMs and incorporate them into their production lines and product design.

"The article encompasses the description of the most popular methods to produce GRMs," explained Mar García-Hernández, who coordinated this comprehensive review. García-Hernández is a Research Professor at

Graphene Flagship partner CSIC, Spain, and the Graphene Flagship Work Package Leader for "Enabling Materials." "This publication also describes some of the technological problems users might encounter, such as the processing of inks and the transfer of materials, as well as the characterisation."

"Understanding this information is essential for users to be able to exploit GRMs effectively, as their characteristics are related to and can be tailored by the process used to make them. For scientists who want to study GRMs, or companies that want to mass produce these materials, this knowledge is vital," concludes García-Hernández.

Alex Wotherspoon, publisher for *2-D Materials*, said: "We are delighted to have collaborated with the Graphene Flagship in publishing what is certain to become a key reference for the materials science community. Making it available to all on an open access basis additionally provides the widest possible dissemination for the benefit of researchers extending across both academia and industry."

**More information:** *2-D Materials*, [iopscience.iop.org/article/10.1088/2053-1583/ab1e0a](https://iopscience.iop.org/article/10.1088/2053-1583/ab1e0a)

Provided by Graphene Flagship

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