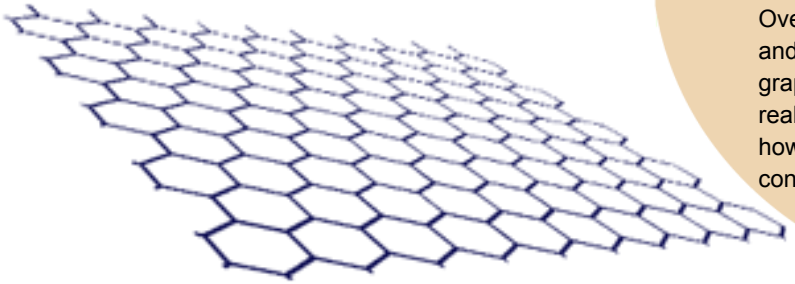
The Center for Nanotechnology in Society
ARIZONA STATE UNIVERSITY

CNS-ASU to Study the Commercialization of Graphene

In 2010 the Nobel Prize in Physics was awarded to physicists Andrew Geim and Konstantin Novoselov at the University of Manchester (UK) for their work on graphene, a carbon material so thin that it is effectively two-dimensional. Geim and Novoselov discovered how to produce graphene in sheets that are only as thick as a single atom yet stronger than steel and more conductive than copper. These qualities make graphene sheets an ideal nano building block with groundbreaking potential applications. For example, in electronics it could perform as a semiconductor well beyond the limits of silicon-based technology. Graphene also offers promise for higher performance solar cells, LCD screens and photon sensors. Nonetheless, today graphene is still at the development stage, and its commercialization has yet to occur.



CNS-ASU team leaders at the Georgia Institute of Technology and University of Manchester have begun a study to understand the as yet undeveloped pathway to the commercialization of graphene – the processes, promises and perils. They have been undertaking field work in two of the world's leading centers for graphene development: the University of Manchester (UK) and Georgia Tech. Their project seeks to understand similarities and differences in the plans, programs and approaches to commercialize graphene-related applications in both locations. This will include examination of both the strategies for research and development and those for fostering commercialization in terms of external partnerships in the metropolitan regions of Manchester and Atlanta, elsewhere in the country, and internationally. In addition to field work, the researchers also will undertake analyses of publica- tions, patents, funding, and corporate activities in graphene.

Map of Graphene Research Centers
(Institutions with 10 or more graphene scientific publications, 2000-2010)

Over time, the researchers plan to expand the focus of their study to other locations in the United States and around the world where graphene research and commercialization clusters are emerging. Although graphene's full impacts may take many years to materialize, the results of this research will provide real-time insights to researchers, companies, policymakers and other stakeholders keen to understand how research in specific nanotechnology domains moves into early applications, what barriers and concerns are raised, and how these are being addressed.

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