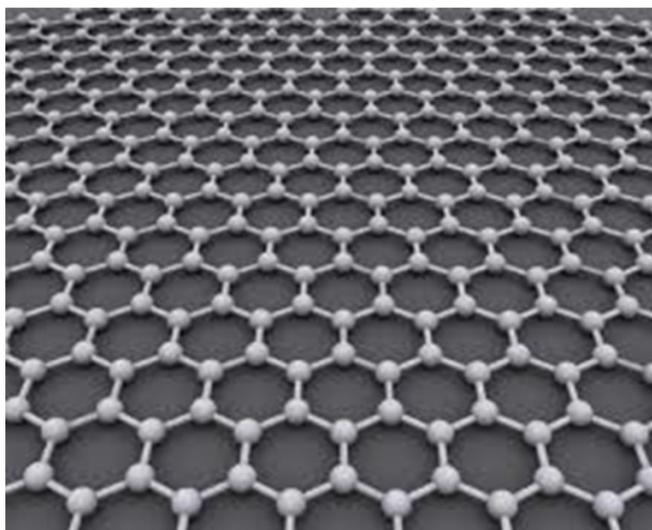


## PRESS RELEASE

# Graphene: a promising new material for electrochemical sensor technology

September 12, 2013 — Graphene, atom-thick sheets of carbon, has the potential to revolutionise electrochemical sensing technology.



*Graphene's unique two-dimensional honeycomb structure endows it with properties which can be utilised in sensor devices.*

A collaboration between two teams of researchers, one from Trinity College Dublin (TCD), Ireland, and the other from Université Joseph Fourier (UJF), Grenoble, France, has shown how graphene can be successfully incorporated into electrochemical sensor devices for the detection of industrially relevant analytes. The graphene is fabricated using a unique method of liquid-phase exfoliation of graphite developed at TCD in the group of Prof. J. N. Coleman, then combined with the pigment Prussian blue and used to sense hydrogen peroxide and hydrazine. The detection of these small molecules is of considerable interest because of the serious health risks associated with them. The report appears in the inaugural issue of the journal *Technology*.

"The synergistic effect of graphene and Prussian blue creates an exciting opportunity for significant advances in the detection of these industrially relevant analytes," says Dr. Gareth Keeley of Trinity College, the paper's lead author.

"We show that, for devices of this kind, graphene out-performs expensive commercially available electrodes made from other carbon allotropes." The incorporation of graphene into electrode systems permits the facile and cheap fabrication of sensor devices which could lead to great advances in sensor technology for these and many other species of interest.

Additional co-authors of the *Technology* paper are (from TCD) Dr. Arlene O'Neill and Profs. Jonathan Coleman and Georg Duesberg; and (from UJF) Drs. Michael Holzinger and Serge Cosnier. The work was supported by funding received from the Irish Research Council, co-funded by Marie Curie Actions under FP7, and facilities were provided by the scientific structure 'Nanobio'.

Corresponding author for this [study in TECHNOLOGY](#) is Gareth Keeley, [keeleyg@tcd.ie](mailto:keeleyg@tcd.ie)

---

## About TECHNOLOGY

Fashioned as a high-impact, high-visibility, top-echelon publication, this new ground-breaking journal — TECHNOLOGY — will feature the development of cutting-edge new technologies in a broad array of emerging fields of science and engineering. The content will have an applied science and technological slant with a focus on both innovation and application to daily lives. It will cover diverse disciplines such as health and life science, energy and environment, advanced materials, technology-based manufacturing, information science and technology, and marine and transportations technologies.

## About World Scientific Publishing Co.

World Scientific Publishing is a leading independent publisher of books and journals for the scholarly, research and professional communities. The company publishes about 500 books annually and more than 120 journals in various fields. World Scientific collaborates with prestigious organisations like the Nobel Foundation, US National Academies Press, as well as its subsidiary, the Imperial College Press, amongst others, to bring high quality academic and professional content to researchers and academics worldwide. To find out more about World Scientific, please visit [www.worldscientific.com](http://www.worldscientific.com).