

## Media Release

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### **New centre for innovative materials research and design launches**

The first collaborative centre of its kind in the Southern Hemisphere, connecting atomically thin materials research excellence, design and industry, launches today at Monash University. The new centre offers new opportunities for boosting Australian manufacturing industries.

The Monash Centre for Atomically Thin Materials (MCATM), a joint initiative between Monash Science and Engineering, is an international hub for research excellence in novel atomically thin materials such as graphene - a plane of carbon just one atom thick. The multidisciplinary centre brings together world-leading expertise from across Monash and with national and international partners and industry. With state-of-the-art facilities and technology, it offers a platform for researchers to gain a deeper understanding of how atomically thin materials integrate with each other or with other materials, to achieve engineering solutions and realise new applications.

Nobel Laureate Sir Konstantin Novoselov from the School of Physics and Astronomy at the University of Manchester (UK), who, with Andrew Geim, first isolated graphene from graphite using sticky tape, welcomed the new centre.

"It's great that Monash University is leading the way in the Southern Hemisphere in developing this new collaborative centre for focused research and development of atomically thin materials like graphene. It's critical that research institutions and industries across the world invest in this growth area which has huge economic impact and the potential to solve many of the world's pressing problems."

Professor Michael Fuhrer, ARC Laureate Fellow in Monash's School of Physics and Astronomy and Director of the MCATM said that atomically thin materials – in particular graphene – are rapidly becoming some of the world's most valued materials.

"These new materials which are only one or a few atoms thick offer enormous potential for industrial transformation across a diverse range of applications. From superior forms of energy storage and transparent electrodes for mobile phone displays to filtration membranes used in water treatment and biomedical applications in tissue regeneration, these 'wonder' materials are attracting the attention of companies worldwide, including in Australia which has rich reserves of the raw materials."

MCATM Co-Director Professor Dan Li, ARC Future Fellow in Monash's Faculty of Engineering, went on to explain why it is so important for Australia to be focusing its research and technology efforts in this high growth area.

“Europe has already invested heavily in research and design for what is arguably the most disruptive and transformative material known. Significant research expertise in Australia and more widely in the Southern Hemisphere, combined with rich reserves of the raw materials need to be harnessed in such a way that Australia becomes recognised as a world leader in atomically thin materials research and commercialisation. By connecting research expertise and industry in one focussed ‘hub’, the new Monash Centre for Atomically Thin Materials aims to do just that,” Professor Li said.

**Some facts about graphene:**

- The world’s thinnest known material – 3 million sheets of these carbon atoms would be needed to make a stack 1mm high.
- The most electronically conductive material known (at room temperature), graphene conducts electricity more efficiently than copper.
- Very flexible but harder than diamond, and 200 times stronger than steel.
- Almost transparent.
- Among its many potential applications are:
  - More powerful, faster-charging batteries.
  - More efficient solar cells.
  - Significantly improved data storage.
  - Water purifying membrane technologies.
  - Biomedical applications in tissue regeneration.
  - Stronger and lighter planes, boats and cars.

For more information on the Monash Centre for Atomically Thin Materials go to: [www.monash.edu/atomically-thin-materials](http://www.monash.edu/atomically-thin-materials)

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