New additions to Wonder Materials exhibition look into the future

Embargoed until December 13

New items have been added to the Museum of Science and Industry's Wonder Materials exhibition – including graphene-enhanced condom samples and a biosensor to non-invasively test drugs dosage toxicities on living cells, with the aim of reducing the need for animal testing.

The new section of the exhibition has the title "From now to the future" and looks at pioneering applications of graphene in the home and in tackling environmental challenges. Included are examples of invisible technology to make our everyday lives easier, the likes of which – such as flexible screens and wearable health monitoring – have previously been the preserve of science fiction.

The curators also look at how a new generation of wonder materials could help tackle some of the huge environmental challenges facing humanity. Adding graphene can make familiar things like light bulbs, cars and aeroplanes use less energy. It can filter water faster, cheaper, with less energy. And graphene-based smart fabrics could detect a leak in a reservoir, or a landfill site.

The graphene-enhanced condom samples have been kindly donated to the Museum by exhibition partners the National Graphene Institute at The University of Manchester. The added graphene makes the condom material stronger and more elastic, which could lead to thinner and safer condoms.

The printed graphene biosensor has been donated by the exhibition's headline sponsors, Haydale Limited. Haydale and its project partners are working to develop a biosensor that could one day become part of a cost effective, printed test strip for biomedical applications, such as to monitor drug toxicities on cells.

Other items include a graphene light bulb – the first commercial application of graphene to emerge from the UK, a water filtration membrane that will make it quicker and cheaper to make sea water drinkable, and lightweight industrial fasteners that would make products easier to recycle.

Wonder Materials is the UK's first major exhibition on graphene and was launched as part of Manchester celebration of becoming the European City of Science 2016. First isolated at The University of Manchester through a process of creative scientific experimentation, graphene is one of the strongest, lightest and most conductive materials in the world.

This ground-breaking show combines science, art and history to reveal the inspiring story of this amazing material. Made from a single, one-atom layer of carbon, graphene is invisible to the naked

eye but has the potential to change the world in a host of areas from energy and electronics to healthcare and mobile phones.

The exhibition runs until 25 June 2017. Admission is free.

Notes to editors

Interview time is available with exhibition curator Sarah Baines, Haydale Limited CEO Ray Gibbs and Dr. Aravind Vijayaraghavan, Lecturer in Nanomaterials at the University of Manchester. Please contact Kat Dibbits, Press and PR Manager at the Museum of Science and Industry, on 0161 606 0176 or email Kat.Dibbits@msimanchester.org.uk.

About The Museum of Science and Industry

The Museum of Science and Industry tells the story of where science met industry and the modern world began. Its mission is to inspire all its visitors, including future scientists and inventors, with the story of how ideas can change the world, from the industrial revolution to today and beyond. Manchester was one of the first global, industrial cities, and its epic rise, decline and resurrection has been echoed in countless other cities around the world. From textiles to computers, the objects and documents held in the museum's collection tell stories of everyday life over the last 200 years, from light bulbs to locomotives.

The Museum of Science and Industry is part of the Science Museum Group, a family of museums which also includes the Science Museum in London; the National Railway Museum in York and Shildon; and the National Media Museum in Bradford.

About Haydale Limited

Haydale are leading the field in creating advanced materials for the next generation of disruptive technologies. They work with graphene and other nanomaterials to enhance the properties of inks, sensors, energy storage, composites, paints and coatings. Haydale are based in South Wales, where they have a purpose built facility for processing and handling materials. They also have offices in Loughborough and South Korea. WEB: www.haydale.com TWITTER: @haydalegraphene

About The National Graphene Institute at the University of Manchester

The National Graphene Institute is a £61m world-leading centre for graphene research and commercialisation, where academics and industry partners can work side by side on the applications of tomorrow. The University of Manchester currently has more than 70 commercial partners and more than 250 graphene and related 2D materials researchers. Funded by the Engineering and Physical Sciences Research Council and the European Regional Development Fund.
www.graphene.manchester.ac.uk