

New GEIC Tier 2 Partners Showcase Range of 2D Material Tech

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Graphene@Manchester is pleased to announce a range of new industrial partnerships, with three new Tier 2 agreements signed in July and more to follow in the coming weeks.

Nationwide Engineering, Nanoplexus and Grafmarine have become Tier 2 partners of the Graphene Engineering Innovation Centre (GEIC), the three very different businesses showcasing the application expertise being developed in our labs and pilot-scale trials (see individual details below).

A Tier 2 Partnership gives participating firms access to GEIC labs, equipment and expertise, plus a managed, low-risk and collaborative approach to explore the possibilities of graphene and other 2D materials from proof of principle through to pre-production.

These new agreements form part of the rapidly expanding innovation network for graphene and 2D materials at [The University of Manchester](#), with sustainability-focused applications demonstrating viability and market impact.

Expanding ecosystem

James Baker, CEO of Graphene@Manchester, said: “It is great to add our latest Tier 2 partners to the broadening list of industry partners being developed through the GEIC and the Graphene@Manchester ecosystem.

“The range of different businesses, supply-chain and application areas really shows the breadth of the markets being addressed through graphene and 2D materials. I look forward to seeing our new and existing collaborations and partnerships further develop into new products and applications in the near future.”

The new recruits

Nationwide Engineering

A construction and civil engineering firm, based in Amesbury, Wiltshire, whose new product Concretene – a graphene-enhanced additive mixture – is making an impact around sustainability in the building trade.

The ad-mixture strengthens the concrete by up to 30%, allowing large volumes of material and steel reinforcement to be removed from the process, reducing emissions and costs.

A world-first pour for this engineered concrete solution in a commercial setting – more than 700m² at the Southern Quarter gym in Amesbury – has proven how the product fits into existing batching equipment and processes and can make a significant contribution to reducing the carbon footprint in construction in the [UK](#) and worldwide.

Nanoplexus

A spin-out from The University of Manchester, developing a platform technology based on decoration of 2D material aerogels for novel catalysts, composites and energy systems.

The firm aims to enable scalable and sustainable clean energy infrastructures through a cost-effective material that can be applied in catalyst-based systems such as fuel cells and carbon sequestration units.

Nanoplexus is currently producing and working with a new class of 2D material, known as MXene, and has taken lab space in the GEIC to scale up production, helped by funding from the European Regional Development Fund (ERDF) Bridging the Gap programme.

CEO Jae Jong Byun commented: “Joining the GEIC as a Tier 2 partner enables us to access state-of-the-art facilities that streamline the commercialisation process, especially for capital

intensive start-ups like ours. The GEIC ecosystem allows us to network with experts and potentially look for collaborations that can broaden Nanoplexus' scope."

Grafmarine

A renewable energy business developing a new type of integrated solar power generation and storage system, to turn any surface into a power generating and storage cluster. The technology is capable of being deployed in any scale clusters and is modular, scalable and future updatable.

As the marine sector edges towards zero emissions, Grafmarine's energy deck will challenge the reliance on heavy marine fuels in propulsion and port power by providing an alternative source of renewable energy. The firm is currently engaging with marine development partners in several key sectors, before manufacture in 2022/3, with a target to provide a vessel with full renewable propulsion power within 3-6 years.

Martin Leigh, Technology Director, said: "As a Manchester-based SME, Grafmarine is delighted to partner Graphene@Manchester in the development of energy storage materials. We look forward to be part of graphene's wider commercialisation success into the future, as we continue to develop our advanced materials."

Read the [original article](#) on The University of Manchester.