



## Material production

Within our materials production facilities we have unique CVD deposition and functionalisation equipment to grow graphene and 2D materials at scale and also functionalise bulk, graphene-based powders, respectively.

## CVD laboratory

The chemical vapour deposition (CVD) laboratory at the GEIC houses unique deposition systems to grow graphene and 2D materials at scale.

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### Aixtron BM Neutron roll-to-roll CVD system

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The Aixtron R2R system is used to grow graphene in a continuous process under atmospheric pressure. The system can produce metres of material per day.

Roll width – max 150 mm diameter foils

Max temperature - 1050°C

Available gases: CH<sub>4</sub>, H<sub>2</sub>, N<sub>2</sub>, acetylene (optional, enquire for details)

Process rate: Typically substrates are moved through at metres per hour

Furnace: Horizontal warm-wall

Please [contact us \(/business/contact/\)](/business/contact/) for more information on pricing and availability.

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Aixtron Novo MOCVD System

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planarTech planarGrow-6E Tube Furnace

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## Powder processing

The GEIC Powder Laboratory gives our members access to various powder processing capabilities and functionalisation methods. The suite includes particle sizing equipment (both for wet and dry measurements), a powder processing area with large extraction, mixing capabilities, drying ovens and a Haydale HT60 plasma functionalisation reactor which can accommodate the following O<sub>2</sub>, NH<sub>3</sub>, CF<sub>4</sub>, Ar and N<sub>2</sub> as available plasma gasses.

We can functionalise various 2D material with a high degree of functionality and reproducibility to suit targeted applications. We work with a number of UK and international partners to give our members access to world class expertise and collaborate with other application areas at the GEIC to create products.

The two main packages that cover the range of the powder processing laboratory capabilities include:

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Functionalisation

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Powder characterisation

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## Our team

[Paul Wiper \(mailto:paul.wiper@manchester.ac.uk\)](mailto:paul.wiper@manchester.ac.uk) - Application Manager, CVD and Powder Labs

[Happiness Ijije \(mailto:happiness.ijije@manchester.ac.uk\)](mailto:happiness.ijije@manchester.ac.uk) - Applications Specialist, Powder Lab

[Andrew Strudwick \(mailto:andrew.strudwick@manchester.ac.uk\)](mailto:andrew.strudwick@manchester.ac.uk) - Application Specialist, CVD



At the GEIC, we use our specialist equipment and expertise in the CVD graphene space to run collaborative projects that address all elements within a supply chain, as well as pulling together contacts and companies to drive graphene commercialisation end-to-end. All of our team have experience working in industry and an understanding of what is required in a collaborative project to achieve the best outcomes.

**Paul Wiper** / Application Manager

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## Contact us

Please call us on +44 (0) 161 275 2441 or complete our contact form to find out how you can partner with us for longer term engagements.

Complete the contact form >>

[\(/business/contact/\)](#)

### Contacts

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Contact details

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