



A Graphene Sensor for Defect Detection
and Predictive Maintenance in Composite Materials

www.graphosite.co.uk

Graphosite Partner:



Haydale Composite Solutions Ltd.

www.haydale.com

Who we are

Haydale is a global technology solutions company passionate about creating the next generation of advanced materials by bringing together cutting-edge technology with engineering know-how to enhance the performance of products and materials thus delivering business value for our customers. We:

- use tailored advanced materials to enhance the quality and performance of our customers' products
- develop nanomaterial enhanced resins for the prepreg carbon fibre market to deliver enhanced electrical, thermal or mechanical performance to the aerospace, automotive and other hi-tech industries
- offer nanomaterial enhanced polymers for additive manufacturing that allow better products to be made faster
- formulate proprietary nanomaterial-based inks and coatings for the print and sensor markets, including regulatory approved ink for biomedical sensors
- manufacture unique, proprietary silicon carbide fibres and whiskers that strengthen ceramics and enable highly scratch and wear resistant coatings for applications as diverse as cookware coatings, cutting tools that make jet engine turbine blades and corrosion protection for oil and gas pipelines

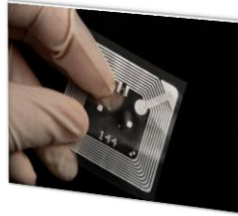
We are at the start of the fourth industrial revolution and we are helping companies seize new opportunities.



Our Product and Services

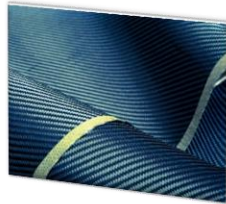
Inks & Coatings

Our unique functional inks provide performance enhancements and cost reductions. These conductive & piezoresistive products offer a unique blend of nanomaterial enhanced and silver inks, which offer unique properties into the coating and paint markets for anti-abrasion, wear and corrosion.



Composites

Haydale continues to develop its range of masterbatch, prepreg and resins for use in composite manufacturing, offering enhanced mechanical, electrical and thermal properties. We specialise in the design, testing, certification and commercialisation of composite structures.



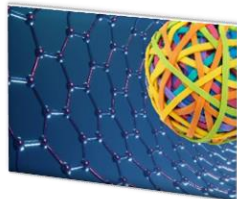
Ceramics

Haydale's custom Silicon Carbide fibre materials have a wide range of applicability, from ceramics, to polymers, to metal matrix composites. Our products impart toughness and durability and survive in the most challenging environments.



Elastomers

We compound nanomaterials into a range of elastomers to support customers using nanomaterials in elastomeric products for a range of property improvements, such as thermal conductivity, electrical conductivity and increased mechanical performance



Our Team

Dr Matthew Thornton is the UK Head of Innovation and Projects and is responsible for the management of a range of nanocomposite materials research, development and manufacturing programmes in both the commercial and UK and EU grant funded sectors. Matthew is a Fellow of the Institute of Materials, Minerals and Mining and is also the Secretary-General for the International Rubber Conference Organisation.

Thomas Greaves is a Senior Project Engineer and is required to manage both commercial and grant funded projects in a wide range of speciality areas and industries. His role is focused on driving innovation in elastomers, composites and inks by demonstrating how the incorporation of nanomaterials into these systems enhances the mechanical, dynamic, electrical and thermal properties.



Romilly Close previous work includes advanced research into topics including nanoadditive-enhanced thermoplastic carbon fibre tapes for automotive CNG fuel tanks, thermoplastics for ballistic protection, and well as rapid on-site repair of structures using self-adhesive carbon fibre tape. Romilly graduated from Sheffield University with a degree in Aerospace Engineering with a Year in North America (Buffalo SUNY), specialising in mechanical testing of composites. Her final project investigated the effect of mechanical and thermal fatigue on stitched and unstitched carbon fibre reinforced polymers for aerospace structures.

Main contact in the project:

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Innovate UK

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