Haydale Graphene Industries plc

("Haydale" or the "Group")

New Graphene Enhanced Composite Products Launched

Haydale Graphene Industries plc (AIM: HAYD), the Group focused on enabling technology for the commercialisation of graphene and other nano materials, is pleased to announce the launch, by its subsidiary Haydale Composites Solutions Ltd ("HCS") of new graphene enhanced composite products at the JEC Composites Show in Paris.

New Generation of Graphene Reinforced Carbon Fibre pre-impregnated composite fibre products launch in collaboration with SHD Composites

Three graphene enhanced carbon fibre pre-impregnated composite fibre ("pre-preg") products have been developed in collaboration with SHD Composites Limited ("SHD"), based in Lincolnshire, UK utilising Huntsman Advanced Materials ("Huntsman") epoxy resins to be marketed by SHD and HCS.

The three products to be launched by SHD and HCS are:

1. a structural component carbon fibre pre-preg with improved toughness and mechanical properties initially aimed at the automotive, marine and sports goods sectors;
2. a prototype "Out-of-Autoclave" curing carbon fibre tooling pre-preg capable of being used for fast composite part production in autoclave processing; and
3. higher operating temperature autoclave tooling pre-preg for enhanced life and very high accuracy (stability) tooling.

Carbon fibre composites are widely used in many applications in aerospace, automotive, and sports goods. As announced on 2 June 2014, researchers have established that using Haydale functionalised GNP's significantly improve both strength and toughness in epoxy composites. These new products will simplify the manufacturing process of the carbon fibre pre-preg and so reduce time and costs of manufacture whilst also improving the material properties.

The market for epoxy resins used in autoclave tooling is estimated to be worth in 2015 $ 1.25bn * annually and is not subject to the highly regulatory requirements associated with the likes of the aerospace and automotive sectors.

Commenting, HCS managing director Gerry Boyce said:

"We are very excited about the significant improvements in thermal and mechanical performance of graphene enhanced carbon epoxy pre-preg structures and look forward to further developing a novel generation of composite materials to improve everyday products in use today, especially in the sporting goods, marine and automotive markets. The tooling market is substantial and offers near term possibilities especially as our offering provides improved "tooling" performance. We believe we are on the verge of a whole new range of graphene based polymer nanocomposites with some exciting and unique properties."

Nick Smith, Technical Director of SHD added:

"As part of our commitment to remain at the forefront of composites technology we feel it is vital to explore the benefits that graphene can bring to our products. We see great potential in this exciting material to enhance the performance of our range of component and tooling materials."

Dr David Hatrick, European Technology Director at Huntsman commented:

"We are making good progress in the initial stages of our collaborative development with Haydale and have been impressed with the improvements delivered in thermal and electrical conductivity in particular. This work is the platform for development of a range of new graphene enhanced Araldite® resins which will be targeted at the industrial composites, automotive and aerospace markets. The next stage of development will focus on demonstration of these resins in carbon fibre composites manufactured with a range of typical processes used by our end customers. In parallel, we look forward to extending our relationship further with Haydale to maximise the commercial potential of this exciting new technology."

First Graphene enhanced Composite Structural Panel for a Road-Going Car

HCS, working with BAC, a leading UK supercar company, has developed a graphene enhanced body panel for the BAC Mono single seat road car. The increased strength of the graphene enhanced epoxy resin has delivered a significant weight and cost reduction.

Ian Briggs, BAC's co-founder and Design Director, said:

"This shows what is possible through the application of cutting edge design and technology. What we can save in mass on structures we can deliver to our customers in terms of improved performance. At BAC we focus heavily on innovation and we were delighted to work with graphene composite industry leaders Haydale on this project. It marks another world first for BAC and the beginning of a project with a broad range of exciting possibilities."

* *ACMITE Market Intelligence Report – Global Epoxy Resin Market March 2014*

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About Haydale

Haydale has developed a patented scalable plasma process to functionalise graphene and other nanomaterials. This enabling technology can provide Haydale with a rapid and highly cost-efficient method of supplying tailored solutions to enhance applications for both raw material suppliers and product manufacturers.

Functionalisation is carried out through a low-pressure plasma process that treats both mined, organic fine powder and other synthetically produced nanomaterial powders, producing high-quality few layered graphenes and graphene nanoplatelets. The process can functionalise with a range of chemical groups, with the level of functionalisation tailored to the customer's needs. Good dispersion improves the properties and performance of the host material and ensures the final product performs as specified.
The Haydale plasma process does not use wet chemistry, nor does it damage the material being processed; rather, it can clean up any impurities inherent in the raw material. The technology is a low energy user and most importantly environmentally friendly. The Haydale process is an enabling technology, allowing the Group to work with a raw material producer who seeks to add value to the base product and tailor the outputs to meet the target applications of the end user.
Haydale, based in South Wales and housed in a purpose-built facility for processing and handling nanomaterials, is facilitating the application of graphenes and other nanomaterials in fields such as inks, sensors, energy storage, photovoltaics, composites, paints and coatings.
www.haydale.com Twitter: @haydalegraphene

About SHD Composites Ltd

SHD Composite Materials Limited is a fast growing company founded by Steve and Helen Doughty. The management team have many years of experience in the manufacturing of pre-pregs, enabling the company to provide first class technical support in all aspects of the business. By working in dynamic partnership with their clients, SHD Composites offers exceptional levels of service and flexibility. This, coupled with a wealth of experience within the composite industry, ensures that SHD Composites provides high quality composite materials. Continued investment in Research and Development and a commitment to develop innovative materials means that SHD has the understanding and ability to develop bespoke products to suit individual client and market sector needs.
www.shdcomposites.com

About Pre-preg:

Pre-preg is a term for "pre-impregnated" composite fibres where a matrix material, such as epoxy, is already present. The fibres often take the form of a weave and the matrix is used to bond them together and to other components during manufacture. The matrix is only partially cured to allow easy handling; this is called B-Stage material and requires cold storage to prevent complete curing. B-Stage pre-preg is always stored in cooled areas since heat accelerates complete polymerization. Hence, composite structures built of pre-pregs will mostly require an oven or autoclave to cure.
There are several advantages and disadvantages of the B-Stage pre-preg process in comparison to the hot injection process. Pre-preg allows one to impregnate the fibres on a flat workable surface, or rather in an industrial process, and then later form the impregnated fibres to a shape which could prove to be problematic for the hot injection process. Pre-preg also allows one to impregnate a bulk amount of fibre and then store it in a cooled area for an extended period of time to cure later. Unfortunately the process can also be time consuming in comparison to the hot injection process and the added value for pre-preg preparation is at the stage of the material supplier

About Huntsman:

Huntsman Corporation is a publicly traded global manufacturer and marketer of differentiated chemicals with 2015 revenues of approximately $10 billion. Our chemical products number in the thousands and are sold worldwide to manufacturers serving a broad and diverse range of consumer and industrial end markets. We operate more than 100 manufacturing and R&D facilities in approximately 30 countries and employ approximately 15,000 associates within our 5 distinct business divisions. For more information about Huntsman, please visit the company's website at www.huntsman.com.

About Huntsman Advanced Materials:

Huntsman Advanced Materials division is a leading global chemical solutions provider with a long heritage of pioneering technologically advanced epoxy, acrylic and polyurethane based polymer products. Our capabilities

in high-performance adhesives and composites serve over 2000 global customers with innovative, tailor-made solutions and more than 1500 products which address global engineering challenges.

About BAC:

Bespoke supercar manufacturer BAC (Briggs Automotive Company) is based in Liverpool and was co-founded by brothers Ian and Neill Briggs. It produces the fast and highly acclaimed Mono supercar, a single-seater formula style car that provides a visceral and exhilarating driving experience.

Since its launch in 2011 it has been going from strength to strength and is now sold in several markets around the world. It launched with great success and fanfare in Hong Kong at the end of 2015, with eight cars sold in a single night. BAC dealers can also be found in North America, Japan and London.

The 2016 model year version of the Mono comes with an all-new four-cylinder 305bhp 2.5-litre Mountune engine, which takes the 580kg car from 0-60mph in just 2.8sec.

Despite its global appeal, BAC Mono remains proudly British, with parts sourced from its home country wherever possible.