Morgan Advanced Materials

15.4

Advanced Thinking in Advanced Materials

NEWS RELEASE

Press Releases from October to December 2015

Unique global hub for structural ceramics development is officially opened

OCTOBER 2015

A state-of-the-art facility which is set to drive global developments in structural ceramic materials and technology has been officially opened by Morgan Advanced Materials.

Morgan's second Global Materials Centre of Excellence, located at the company's manufacturing facility in Stourport-on-Severn, Worcestershire, was opened by Morgan's Chief Executive Officer, Pete Raby,

Employing a dedicated team of materials specialists and design engineers, the multi-million pound facility will be responsible for the development of new materials technologies for applications in sectors as diverse as aerospace, medical and the environment.

Morgan's Chief Technology Officer, Mike Murray, explained: "Morgan's first Centre of Excellence was opened at our Thermal Ceramics facility in Bromborough in 2008 and has established itself as a leader in the development of high-temperature fibres, which are delivering performance improvements for customers worldwide.

"We envisage that the Stourport Centre of Excellence will set the benchmark for innovation in structural ceramics, bringing together idea generation and realisation in a single dedicated facility."

Pete Raby added: "The Centre will help us to create critical mass in materials and process development.

"The team will drive forward innovation in processes and material formulations, as well as engaging in collaboration with academic facilities worldwide. This will accelerate our product development and help us to meet the needs of customer for new technologies more quickly."

Stourport was chosen as the location for the facility from a shortlist of six manufacturing locations across the globe.

With operations in more than 50 countries, Morgan draws on extensive materials capability to deliver highly engineered solutions to markets from medical, aerospace, and power generation to body armour, trains and fire protection systems.

New coatings will help limit contamination in crucibles

OCTOBER 2015

Morgan Advanced Materials has made two new additions to its extensive range of crucible coatings for the foundry sector.

Contamination of molten metals by crucible materials during melting operations can be minimised by coating the interior surface of the crucible, helping to prevent reactions between the metal and the crucible while acting as a diffusion barrier to reduce impurities.

PRO™ and STAR™ Coatings from Morgan's Molten Metal Systems business have been formulated to reduce impurities and so optimise the quality of the molten metal and the final cast product.

PRO Coating is a thin covering which significantly reduces impurities when melting and holding pure alloys. It also stops dross build-up, making cleaning easier. PRO Coating can be mixed with water and applied to the crucible with a brush. It can also be used as a mortar to repair areas that may have been damaged or chipped, maximising crucible life.

Chemically bonded and consisting of sintered alumina, PRO Coating can be used up to a melting temperature of 1,600°C (2912°F) making it ideal for use with high-purity aluminium, aluminium alloys and precious metals.

Designed specifically for melting pure aluminium (Al5N), Morgan's STAR Coating can be applied onto all clay-bonded crucibles and carbon bonded by spraying. It is then fired to ensure a good bond. Consisting primarily of Boron Nitride with an oxide bond, it can be used up to a melting temperature of 1,000°C (1832°F).

STAR Coating prevents contamination of the aluminium and dross build-up in the crucible, ensuring the highest purity of metal when melting aluminium and aluminium alloys.

Mirco Pavoni of Morgan's Molten Metal Systems business commented: "Coatings play an important role in ensuring clean melts and tests have demonstrated a dramatic increase in the purity of metals treated in crucibles to which our coatings have been applied. These coatings will help to optimise finished product quality while reducing total cost of ownership, with a positive impact on our customers' bottom line."

Morgan conducts first graphene experiment at University of Manchester

OCTOBER 2015

The first official experiment has taken place in a novel collaboration between industry and academia in the production of graphene – a one-atom thick carbon allotrope with a multitude of potential applications.

Morgan Advanced Materials joined forces last year with The University of Manchester – where graphene was first isolated a decade ago – to explore the potential of the material, with a full-time team based at the University's National Graphene Institute (NGI). Morgan is one of the Institute's first industrial partners.

The project is gathering pace, with early work focusing on scaling up Manchester's patented technology to produce graphene. This process sees molecules driven between the layers of a graphite electrode to separate them.

The process is radically different from chemical vapour deposition (CVD) methods, which are used to grow individual graphene layers upon a substrate, and generally require high processing temperatures with low throughput.

Advances in this area enable greater flexibility of the process, controlling properties such as flake size and thickness while also allowing the inclusion of other attributes via in-situ functionalisation, to meet precise specifications depending on exact application needs.

Dr Mike Murray, Chief Technology Officer of Morgan Advanced Materials, commented: "With its unique combination of properties – light weight, chemical inertness, and large surface area- the potential industrial applications of graphene are enormous, but much depends on finding the most viable and cost-effective method of manufacture.

"As a global leader in the development and practical application of proprietary materials, Morgan is ideally placed to lead this process in conjunction with the NGI. We have committed a full-time team to be based at the NGI and are delighted with the results to date, which indicate the very real possibility of manufacturing larger graphene layers, able to be adapted for a range of requirements."

James Baker, Business Director at the National Graphene Institute, added: "We are already seeing great results from this exciting partnership and collaboration between NGI and Morgan Advanced Materials. This demonstrates the benefits of co-locating industry engineering and academic research teams to accelerate the commercialisation of graphene material and its applications."

Versatile Superwool® Sealcoat™ HT Mastics Highlighted

OCTOBER 2015

The Thermal Ceramics business of Morgan Advanced Materials has developed a versatile fibre, Superwool® Sealcoat™ HT, which is suitable for use in nearly a dozen furnace lining applications. From primary liner to emergency repairs, and backup insulation to patching, the mastics are a perfect complement to Morgan's range of fiber and dense refractory materials.

Specially formulated to provide the high level of atomisation required for spray application, Superwool Sealcoat HT can be applied as part of the primary liner over fibre or refractory surfaces, up to 2 inches (5.1 cm) thick on walls and up to ½-inch (1.3 cm) overhead. Installation requires no chemical cure-out, so lining can be fired immediately after installation. Once dried, the material provides a strong hard surface, while still maintaining resiliency.

Repairs capability is another strength for Superwool® Sealcoat HT. For emergency repairs to cracked walls or spalled floor jams, Superwool® Sealcoat HT can be applied over hot refractory or hot fibre surfaces. The material also works well as a caulk for repairing large gouges in reheat furnace and ladle preheat stations, and for filling shrinkage gaps and damaged areas in linings. It is also ideal as a patching material for aluminum trough and launder repair, and vacuum-formed shape repair.

As a backup insulation, Superwool® Sealcoat HT can be applied to a steel shell in place of insulating board or paper, prior to installing the working lining. Its use avoids the need to cut and fit insulation around pre-welded anchors. It can also be used as an adhesive for installing backup board on an induction furnace. With almost no rebound, very little waste is generated and no overage is required. After installation, site clean-up is also greatly reduced

Superwool® Sealcoat HT can also be used in joint sealing, gasketing, and as a hot-face veneer coating to improve a lining's thermal efficiency. Demonstrating the numerous alternative applications for this multipurpose material.

Morgan Advanced Materials highlights updated Specialty Graphite engineering capabilities

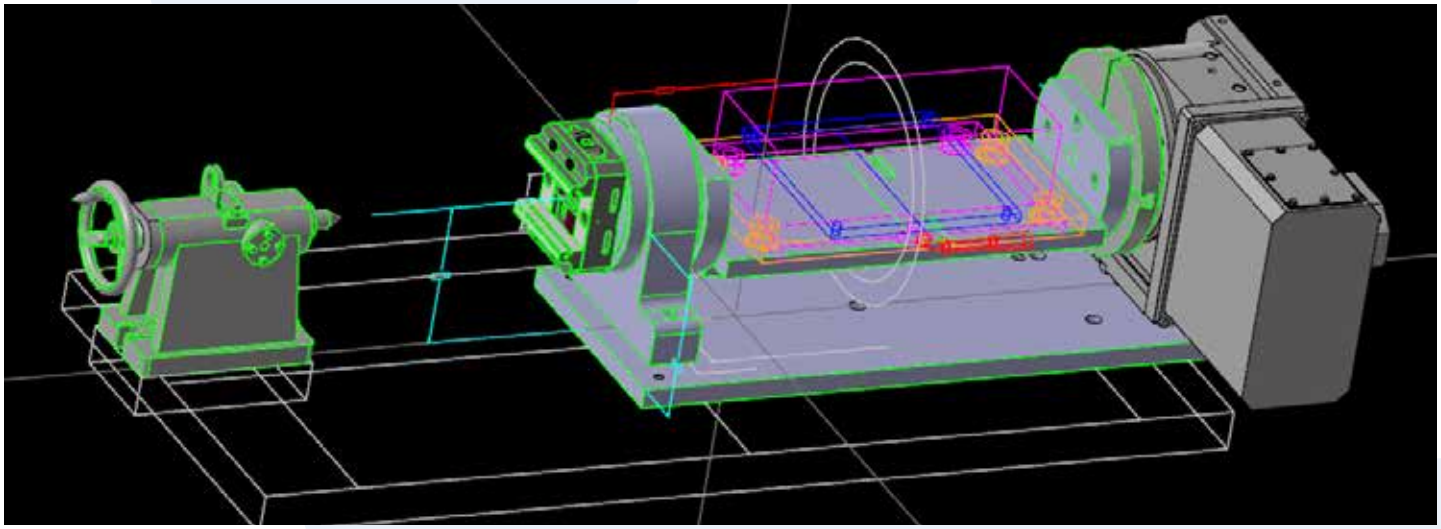
OCTOBER 2015

The Specialty Graphite business of Morgan Advanced Materials meets unique customer specifications through its advanced engineering capabilities and expertise in designing products for manufacture. The extensive experience which Morgan's engineers, together with the latest in design software and manufacturing capabilities, ensures that customers' products are designed and manufactured to the highest possible standards. Specialty Graphite parts are suitable for severe service applications including the semiconductor industry, glass and metal production and aerospace

"Our engineers possess an impressive amount of experience ¬– all have worked for at least a decade in their chosen field, some for 20 years or more – they are able to put this wealth of diverse knowledge, as machinists and engineers, into creatively designing solutions to improve the manufacturability and cost-effectiveness of our customers' designs," said Mike Kane, Engineering Manager at Morgan's Speciality Graphite business.

The engineering department reviews customer product designs before manufacture; utilising Mastercam CAM/CAD software, as well as Solidworks and ProEngineer for CAD, in order to optimize customer designs. They also answer customer questions about the capabilities of Specialty Graphite's manufactured products, in order to offer the best solution for each customer's requirements.

The engineering department works closely with customers to review designs, generate quotes, and address end user issues. Morgan experts are also able to retrofit problematic designs to make them suitable for manufacture, ensuring cost-effective production for customers.



Acclaimed blanket insulation now available in large size and roll form

OCTOBER 2015

The acclaimed Porextherm WDS® MultiFlex® high-performance flexible microporous insulation blanket from Morgan Advanced Materials is now available in large size and roll form, making it suitable for an even broader range of applications.

WDS MultiRoll® ST draws on the same ground-breaking technology which has made WDS MultiFlex® mats the first choice for specifiers in applications from downstream oil & gas piping insulation and transport exhaust systems, to marine engines, decks and bulkheads, and passive fire protection.

Compliant with the ASTM C1676 standard specification for microporous insulation and non-flammable in accordance with DIN EN 13501-1, Euroclass A1, WDS MultiRoll ST delivers best-in-class thermal insulation performance – five times that of conventional insulation products - across a broad temperature range, with thermal stability up to 1,050°C (1,922°F). It is based on WDS technology, which allows the consistent control of the texture and distribution of minerals within the microporous mineral matrix core, ensuring optimal thermal characteristics alongside superior mechanical properties.

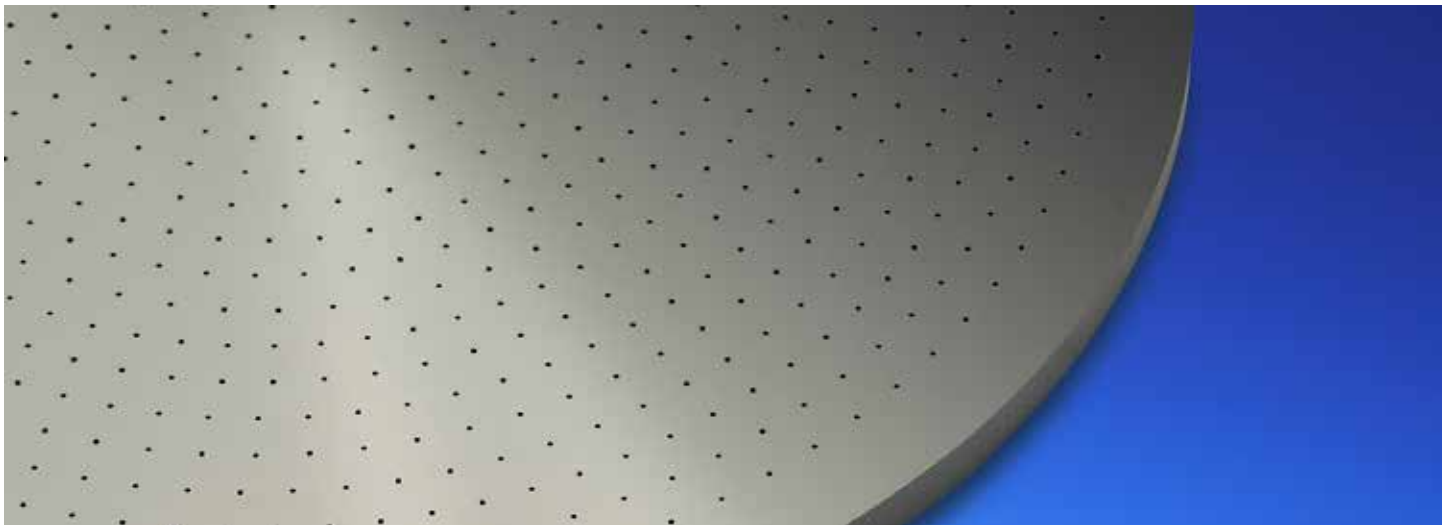
Inorganic and non-combustible, WDS MultiRoll ST is also ultra-thin, making it ideal for insulating complex geometries or areas with limited space. It offers easy and rapid handling, installation and fixing.

Guido Chiappano of Morgan Advanced Materials explained: "The unique properties of WDS MultiFlex have established the system as a high-performance insulator in a broad spectrum of applications where heat loss or passage cannot be tolerated.

"Its availability on a roll further enhances the capabilities of the system, reducing the number of joins and potential for gaps, so minimising thermal bridges and consequential heat loss and providing a clear advantage by reducing installation costs."

Morgan expands large area CVD capabilities for SiC and PBN for the semiconductor market

OCTOBER 2015



Morgan Advanced Materials announces the expansion of its large area chemical vapor deposition (CVD) capabilities for manufacturing silicon carbide (SiC) and pyrolytic boron nitride (PBN). The large area CVD materials are ideal for use in metalorganic chemical vapor deposition (MOCVD) heaters and for chamber components in semiconductor applications.

Morgan can now manufacture CVD SiC sheets in sizes as large as 100 x 100 millimeters square with thicknesses up to 20 millimeters ¬– a 25 percent increase over what has previously been available. Monolithic CVD SiC discs can be produced in diameters up to 340 mm in with thicknesses up to 12 mm – dimensions well suited to many etch applications.

PBN plate is also now available in sizes up to 350 mm x 200 mm x 1 mm, a 35 percent increase over standard available sizes. Morgan's high quality PBN plates are an excellent choice for heating arrays for MOCVD reactors, for which the materials offer a very high erosion resistance and provide a tenfold decrease in particulate compared to conventional graphite components.

These new material sizes are an enabling technology that allow customers to extend process lifetimes and add value to equipment through reduced maintenance downtime.

Morgan increases vacuum brazing capacity at Rugby manufacturing facility

OCTOBER 2015

Following investment in state-of-the-art technology, Morgan Advanced Materials has increased the manufacturing capability of its Technical Ceramics facility in Rugby, UK, commensurate with its strategic growth aspirations.

The business has experienced enviable levels of growth in areas such as ceramic-to-metal brazed assemblies and feedthroughs throughout 2015 and has launched a programme of capital investment to support the increased demand within the market.

The investment delivered an increase in vacuum brazing capacity at the Rugby facility, which specialises in technical ceramics. The investment takes place against a backdrop of increased use of vacuum brazing technology in the ceramic-to-metal brazing process as this enables a wider range of material options to be offered to customers.

The new vacuum furnace will be used for molybdenum manganese (MoMn) brazing and metallised ceramics to mating metal parts as well as active alloy brazing utilising Morgan's extensive range of active braze alloys (ABAs). Products manufactured using this technology are used in a wide range of applications including electrical feedthroughs for analytical and medical systems, aerospace thermocouples and subsea connectors.

Oliver Ridd, International Sales and New Business Development Manager at Morgan, explained: "Morgan is committed to strengthening its offering wherever possible in order to fully satisfy demand within the market and it is this philosophy of continuous improvement that underpins the way we do business. With the increased capacity and flexibility that has resulted from the investment, we are now more responsive than ever to the evolving needs of our customers."

Morgan's SEW3 app allows easy comparison of performance benefits of thermal insulation materials

NOVEMBER 2015

Morgan Advanced Materials has launched an innovative interactive tool, allowing the comparison of thermal, economic and environmental performances of a variety of thermal insulation systems over the course of their working lifetimes.

With demand for cost and energy reductions coupled with greater energy efficiency growing consistently, the SEW3 app, available exclusively to employees within Morgan's high performance thermal insulation business, Porextherm, provides customers with the analysis necessary to make informed decisions around their choice of insulation materials. By comparing a range of thermal insulation materials alongside one another, working in conjunction with customers, this enables Morgan exployees to pinpoint solutions for potential customers which fully satisfy their individual requirements, conveniently and cost-effectively, based on the projected lifetime usage. Over the long term, this will enable businesses to make significant cost savings, while reducing energy consumption and carbon footprint.

By highlighting the key properties of Morgan's acclaimed range of thermal insulation materials, the SEW3 app highlights the best product mix to customers, whether that requirement is for single insulation or by marrying together multiple insulations in composite systems.

Guido Chiappano, Head of Sales and Marketing - High Temperature Insulation products at Morgan, explained: "The SEW3 app is about empowering stakeholders at various levels of the business – from purchasers to plant managers to CEOs - by providing them with the information they need to make the best decisions given their requirements. We aim to use this platform to highlight the superior performance of Morgan's products relative to any other products on the market by enabling a clear and simple comparision. This industry-leading innovation from Morgan demonstrates our commitment to providing a world-class service by working collaboratively with customers."

Another insulation fire brick in the wall from Morgan

NOVEMBER 2015

Drawing on more than 50 years of expertise in the field of high temperature insulation solutions, Morgan Advanced Materials has produced the JM 23-400, a best in class lightweight insulating fire brick with superior physical properties.

This latest development comes in response to overwhelming market demand and weighing at a mere 390 kg/ m3, the JM 23-400 is the lightest class 23 product manufactured by Morgan to date. Furthermore, it is cast-produced and offers, on average, about 10% lower thermal conductivity compared to standard bricks in the JM 23 range, making it ideal for applications where a high level of insulation is required.

Morgan's latest innovation follows extensive research & development and offers a solution to issues around heat containment in a variety of industries, ranging from ceramic production to anodes for primary aluminium. Suited to exactly the same applications as its JM-23 counterparts, the JM23-400 has been proven to significantly reduce energy consumption, and can be used in conjunction with Blakite or JM 2600 to secure joints. Furthermore, it comes in a range of sizes, with options available to suit virtually any application.

Massimiliano Marchetti of Morgan Advanced Materials, explained: "The development of the new JM 23-400 represents a significant step forward in our mission to produce high quality, lightweight insulation bricks. We closely monitor developments within the market and wherever there is demand, there is scope for a solution. We deliver solutions that solve the most pressing issues for our customers and it is this philosophy that underpins our status as the supplier of choice for thermal ceramics."

Morgan Advanced Materials' Thermal Ceramics business supplies a wide range of high-temperature insulation bricks and monolithics, as well as fire protection materials, for a variety of applications and sectors.

Unrivalled performance in ferrous applications from new Morgan stopper rods

NOVEMBER 2015

Morgan Advanced Materials has launched a new range of stopper rods (monoblock stopper for cast iron applications).

This latest innovation from Morgan's Molten Metal Systems business, designed specifically for auto-pour applications such as unheated tundish systems as well as press pour systems, is based on alumina-graphite compositions which are primarily for grey and ductile iron applications.

Following substantial research and development, and testing Morgan has created a product that offers optimal performance through its superior physical properties. Drawing on a wealth of expertise dating back more than a century and a half, Morgan's advanced material processing technology results in a uniform structure and therefore, exceptional performance in demanding applications. In addition, Morgan's ceramic-bonded rods have a refractory capability of 1600-1700°C (2912-3092°F), with unrivalled strength and erosion resistance.

As further evidence of their prowess in melting solutions, Morgan's stopper rods have fared extremely well in tests alongside equivalent products. These showed that Morgan products performed consistently for 40 casting hours, compared with 35 and 12 hours for other products. This level of performance means shortened changeover times and therefore, reduced labour costs, production downtime and metal loss.

Morgan also solicited customer feedback and a key finding was that strength was the main requisite for this type of product, due to its high stress application. The pouring application is controlled by the continuous lifting and dropping of the stopper rod, where the nose (curved region) is repeatedly striking against the nozzle. Accordingly, Morgan carried out Cold Compression Strength (CCS) tests to determine the right mix and subsequently, to achieve a level of strength that was consistent with market requirements. Once again, Morgan demonstrated superior quality, with its rods exhibiting a 14-24 per cent advantage in strength compared with other stopper rods. This is indicative of less damage to the stopper rod and therefore, consistent metal flow during casting.

Mirco Pavoni, Global Technology Director for Morgan's Molten Metal Systems business, commented: "We go to considerable lengths to ensure the quality and performance of our products, carrying out extensive research and development. Manufacturing products that are simply 'good enough' is not our goal; we constantly strive to out-perform our competitors and push the boundaries of excellence for the benefit of our customers. That is our mission and as the results suggest, we are succeeding."

CAMAC® platform armor systems by Morgan offer lower weight and superior multi-hit performance

NOVEMBER 2015

The Composites and Defence systems business of Morgan Advanced Materials announces a complete range of CAMAC® platform armor systems. Engineered using a unique combination of advanced ceramic and structural composite materials, Morgan's high performance multi-hit armor weighs up to 50 percent less than equivalent steel products for high threat level systems.

Morgan's CAMAC platform armor portfolio includes appliqué armor, spall liners, structural composite survivability capsules for replacing metallic hulls, protected weapon stations and other applications. CAMAC platform armor can be used on land, marine and aerospace platforms.

CAMAC Appliqué armour provides lightweight, multi-hit protection for new and existing platforms against a wide range of threats from STANAG 4569 (Standardization Agreement (NATO)) Levels 2-6. CAMAC spall liners improve crew and platform survivability through the mitigation of behind armour effects, whilst CAMAC weapons stations deliver multi-hit protection and weight reductions for improved platform performance.

Morgan has world leading expertise in composite survivability capsules, with combat vehicles first fielded in 1990. Using Morgan CAMAC armor, the Snatch Land Rover was the world's first fully composite armored vehicle body. Morgan CAMAC Composite Survivability Capsule technology has also been integrated into the TATA Motors LAMV as a key weight reduction enabler.

James Kempston, Business Manager – Composites and Defence Systems, North America, said: "The application of ultra-light CAMAC armor on land, marine and air platforms offers many benefits in comparison to traditional metallic alternatives. Its light weight allows for improved air transportability and maneuverability. Being able to integrate CAMAC platform armor onto new and existing platforms offers an opportunity for strategic weight reduction when designing or upgrading a platform".

CAMAC lightweight high protection platform armor is available in off-the-shelf systems for a variety of hull materials and thicknesses and can also be tailored to the requirements of the threat, the individual platform, and its operational duties. Morgan works with both OEMs and prime contractors to integrate armor on their vehicles. Extensive global capabilities means Morgan can design, prototype, test, manufacture and field advanced armor within tight timelines to meet urgent customer requirements.

Morgan awarded combat helmet contract by Canada's Department of National Defence

NOVEMBER 2015

The Composites and Defence Systems business of Morgan Advanced Materials has been awarded the Canadian CM735 Combat Helmet contract. The improved helmet features an innovative ultra-lightweight hybrid composite structure, the result of more than three years of materials research and development and achieves outstanding ballistic performance at an extraordinarily low weight. Morgan's extensive capabilities have supplied over one million combat helmets as part of the company's LASA (Lightweight Armored Soldier Architecture) line of products.

Constructed using world leading lightweight composite materials, Morgan's hybrid composite helmet technology delivers outstanding helmet performance for fragmentation and ballistic protection with improved structural integrity while providing high levels of flame resistance. The helmet also features Morgan's latest ballistic and fragment composite technology, which helps to avoid severe injury from back face deformation and dynamic impact to the user's head when the shell is hit by fragments.

Morgan's new CM735 Canadian shell provides very high levels of ballistic performance with weight savings of approximately 23 percent over the existing CG634 shell with a weight of less than 920 grams (32 ounces).

"Morgan is honoured to be providing the Canadian Forces with their next generation lightweight ballistic helmet," said Composites and Defence Systems North America Business Manager James Kempston. "Morgan's CM735 solution uses the latest composite technology, providing increased protection for substantially less weight. With nearly 25 percent weight reduction it is truly a game changing helmet in an environment where reduced burden is directly related to increased user performance and decreased fatigue."

Global materials company wins prestigious business award

DECEMBER 2015

Materials engineering company, Morgan Advanced Materials, has won a highly respected regional award at this year's prestigious EEF/Aldermore Future Manufacturing Awards.

Morgan Advanced Materials, which employs over 9,000 people worldwide and has multiple sites in the Midlands, including Coventry, Stourport and Rugby, won the Developing People Award, given to the manufacturer that has done the most to build skills, harness talent and develop its employees. Throughout Europe the company runs a structured development programme for Graduates, designed to develop them into future leaders and provide key talent for the business. The company was selected by a panel of judges drawn from business leaders, industry experts and academics and was up against stiff competition from a range of impressive businesses, small and large, from across the region.

With the regional title now under its belt, Morgan Advanced Materials will now go on to compete for the national title at an awards gala dinner in London in January next year.

Jane Edmondson, Graduate Programme Manager Europe, at Morgan Advanced Materials, says: "This award is down to our team's hard work and dedication, and we are delighted to have won. Not only does it demonstrate the valuable contribution made by local manufacturers like ourselves, but it also puts us on the map as a modern and innovative company. This is great news for us to share with all our staff, customers and suppliers. "It's fantastic to get this far and now we're all looking forward to the national finals in January to see how we measure up against other leading manufacturers from across the UK."

Carl D'Ammassa, Group Managing Director - Business Finance at Aldermore, says: "Businesses are aware that fostering and developing employees' skills is essential to their future success and competitiveness - and manufacturers are leading the way. This award is justly deserved and Morgan Advanced Materials should be applauded for their efforts. We wish them the best of luck for the national finals."

Morgan brings industry-leading ceramics to HIFU transducers

DECEMBER 2015

Morgan Advanced Materials, widely acknowledged as a global leader in ceramics and other advanced materials, has announced that it now has the capability to design and manufacture components for use in high intensity focused ultrasound (HIFU) technologies, particularly in medical applications.

Morgan is producing HIFU ultrasound transducers in a range of shapes and geometries, from 5mm to 150mm in diameter and with frequencies between 200kHz and 8MHz. The transducers are made from a modified range of hard piezoelectric (PZT) materials, which have been developed from Morgan's own proprietary range of ceramics. Other piezoelectric formulations are available on request depending on the ultrasonic power level required in the application.

HIFU is used in a range of applications, including the treatment of uterine fibroids, cancer research and cosmetic therapies. In HIFU, ultrasound beams emanate from the PZT transducer, heating or agitating the target tissue. As a result, the tissue is destroyed by coagulation necrosis.

The operating frequencies used can vary widely, according to the area of the body being treated. In general, the lower the frequency, the deeper the penetration of the focused ultrasound; cysts, for example, require lower frequencies, from 250KHz to 2MHz. Higher frequencies, of 6MHz and above, are typically used to treat forehead skin, close to the skull.

In cosmetic medicine, HIFU has been cleared to treat subcutaneous tissues for the purpose of body contouring, also known as non-invasive liposuction. The use of HIFU is not restricted to medicine; in industrial settings, it is used to break off solids or agglomerations of compounds. In some water treatment plants, for example, HIFU is used to destroy soils and promote the process of osmosis that purifies the water.

Frédéric Pimparel, Technical Application Manager for Morgan Advanced Materials explains, several of Morgan's cutting edge ceramics are particularly suitable for HIFU. "Many of our exclusive, proprietary materials have qualities that are very helpful in HIFU. For example PZT401 offers a good compromise between high permittivity, low dielectric losses, high density, high piezoelectric activity and a high mechanical factor. "This combination makes a transducer that is extremely efficient, and maximises the propagation of ultrasound wave energy. Another ceramic, PZT807, is excellent where higher HIFU power levels are needed, because it offers even lower dielectric losses, which means that it can be driven at higher frequencies and voltages, without causing self-heating of the transducer. PZT807 is also very dense and has low porosity, so is ideal for machining in thin components," he added.

Morgan advanced materials launches ultra-lightweight hybrid composite military helmet range

DECEMBER 2015

Morgan Advanced Materials, a world leader in the application of advanced composite material technology, has unveiled its newest range of lightweight combat helmets, the LASA AC914 and AC915.

The LASA AC914 and LASA AC915 draw upon the expertise of the Composites and Defence business of Morgan Advanced Materials. Morgan has a wealth of experience in composite materials and an established pedigree within the military and law enforcement sectors, having sold in excess of one million helmets worldwide. The helmets' revolutionary designs deliver outstanding ballistic performance and comfort to the wearer. Made using a hybrid of composite materials and incorporating Morgan's proprietary technology, the helmets' shells are approximately 30% lighter than previous generation technology and deliver outstanding protection against ballistic threats, fragments and blunt trauma.

In full compliance with NIJ 0101.06 level IIIA, the LASA AC914 and AC915 offer an unparalleled level of protection against blunt trauma and 9mm rounds, maximising user safety in combat situations. The high-cut LASA AC915 weighs little more than 1kg and allows for greater situational awareness, making it ideal for special operations. Similarly, the AC914, with its full-cut design for combat operations, offers unmatched ballistic and blunt trauma protection - particularly impressive given that it weighs a mere 1.2kg (2.6lb). In both instances, the AC914 and AC915 offer exceptional levels of fragmentation protection and come with optional visor and mandible guard to provide greater high impact protection for the eyes and face.

Available in a variety of configurations, the LASA AC914 and AC915 are compatible with in-service equipment including night vision goggles as well as an array of other accessories. While the helmets have been designed to offer the greatest levels of protection, the configurable suspension systems also deliver optimum levels of user comfort.

Duncan Eldridge, President of Morgan Advanced Materials - Composites and Defence Systems, explained: "we are delighted to launch the LASA AC915 and AC914 helmets, the helmets are a result of three years of materials and product development, which have also been applied to our next generation helmet for Canada. Our expert knowledge in composite materials and application has once again allowed us to create a range of helmets that offer a level of protection at a weight beyond that typically afforded by standard ultra-lightweight helmet solutions.

Morgan
Advanced Materials

ABOUT MORGAN ADVANCED MATERIALS

Morgan Advanced Materials is a global engineering company offering world-leading competencies in materials science, specialist manufacturing and applications engineering.

We focus our resources on the delivery of products that help our customers to solve technically challenging Problems, enabling them to address global trends such as energy demand, advances in healthcare and environmental sustainability.

What differentiates us?

Advanced material science and processing capabilities. Extensive applications engineering experience. A strong history of innovation and reinvention. Consistent and reliable performance. A truly global footprint. We find and invest in the best people.

For all enquiries, please contact our specialist sales and manufacturing sites:

Europe

Morgan Advanced Materials
Morgan Drive
Stourport-on-Severn
Worcestershire DY13 8DW
United Kingdom

T +44 (0) 1299 872210
F +44 (0) 1299 872218
europesales@morganplc.com

North America

Morgan Advanced Materials
4000 Westchase Boulevard
Suite 170, Raleigh,
NC 27607-3970
USA

T +1 (855) 809 9571
F +1 (706) 622 4424
nasales@morganplc.com

South America

Morgan Advanced Materials
Avenida do Taboão 3265- São
Bernardo do Campo - SP
CEP 09656 000
Brasil

T +55 (11) 4075 0400
F +55 (11) 4075 7547
sasales@morganplc.com

Asia

Morgan Advanced Materials
150 Kampong Ampat
05-06A
KA Centre
Singapore 368324

T +65 6595 0000
F +65 6595 0005
asiasales@morganplc.com

Morgan Advanced Materials plc
Quadrant, 55-57 High Street,
Windsor, Berkshire, SL4 1LP United Kingdom

Designed and Produced by Morgan Advanced Materials plc

www.morganadvancedmaterials.com