About the Association

The International Titanium Association (ITA) is a nonprofit networking trade association for the titanium industry. Established in 1984, the Association’s mission is to connect the public interested in using titanium with titanium specialist all over the world who may offer technical and sales assistance. The ITA also offers titanium literature and sponsors a variety of events such as educational workshops, seminars, and the annual TITANIUM Conference and Exhibition. The Association currently has over 200 member companies worldwide.
Titanium News

RTI Announces Two Long-Term Titanium Fabrication Awards with Airbus and Modifies Long-Term Supply Agreements

• Fabrication awards expected to generate in excess of $150 million of revenue for titanium parts through 2020

• Modified mill product agreement allows Airbus near-term flexibility with its titanium requirements and its estimated value continues to be in excess of $1.0 billion in revenue through 2020

PITTSBURGH--(BUSINESS WIRE)-- RTI International Metals, Inc., (NYSE: RTI), announced today that it has modified its long-term agreement with Airbus to allow more flexibility in the near-term with Airbus’ ordering of titanium mill products. As part of the modification, Airbus has ordered more titanium mill product volume for 2010 than was anticipated at the start of the year. General terms and conditions remain in line with the original agreements.

In addition, under two contract awards commencing in 2011, RTI will fabricate critical structural titanium

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Titanium Industries Successfully Implements STRATIX, The Metal Industry ERP Software From Invera

Rockaway, NJ - Titanium Industries, a titanium metal service center, has implemented the metal service center ERP software STRATIX from the metal industry software specialist Invera.

The first phase of implementation included all seven locations in the U.S. (Rockaway, NJ, Wood Dale, IL, Brooklyn Heights, OH, Santa Fe Springs, CA, Jacksonville, FL, and Hillsboro, TX, and Tolland, CT). The implementation included sales, purchasing, receiving, inventory management, certification management, multi-step production, delivery and logistics planning, invoicing, and financials.

Search for Quality

As Titanium Industries’ business grew larger, more global, and more complex, they looked to Invera to provide a system that could accommodate their stringent quality and certification requirements, while enabling them to operate efficiently. TI found their solution in STRATIX.

After completing their training, Titanium Industries implemented a full complement of STRATIX ERP metal software features, including Quote and Sales Order Entry, metal price book, water-jet plate cutting pricing, multi-step processing, shop floor production recording, and on-line shipment planning.

Sales

Titanium Industries selected STRATIX to improve the productivity of their sales staff through the use of specialized tools to quote and manage orders more rapidly and effectively. The Quote Entry function provides stock availability, incoming material availability, sales history, and quantity bracket information, all in one screen, to help the salesperson quickly determine the final price.

To take advantage of their large inventory at all locations, sales staff can see the stock availability in any TI warehouse location. This allows the salesperson to source the order from another company location. In addition, if that load is consolidated at a single company location before the material is shipped to the customer, STRATIX creates the transfer requirements automatically. This saves a lot of time for the salesperson and makes it easier for us to

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Perryman Company Announces Titanium Bar Finishing Expansion

Houston, PA, 9/27/10 – Perryman Company announced today it plans to expand its capabilities in titanium bar finishing. The expansion will take place within the Houston, PA campus and will provide the company capabilities to finish larger diameter titanium round bar product up to 4.00” (102 mm) in diameter.

“The expansion of our bar capabilities is a natural extension of our existing bar products supported by the integration of our melting and breakdown operations”, commented Frank Perryman, President and CEO. With this investment, Perryman will be in position to better serve existing and new customers in both the aerospace and medical markets as well as recreational and industrial markets. “We see continued growth and opportunity in a range of sectors, particularly in aerospace for the airframe and engine segments and in forging bar for the medical market,” stated Perryman.

Consistent with the company’s long term strategy, this enhancement will allow Perryman flexibility to expand

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**Titanium News**

**DYNAMET TECHNOLOGY ANNOUNCES SUCCESSFUL PRODUCTION OF PROTOTYPE SPROCKET CARRIER FOR THE MARINE CORPS**

10/4/10 -- Dynamet Technology, Inc., Burlington Massachusetts has announced the successful production of prototype sprocket carriers for the Marine Corps. Expeditionary Fighting Vehicle (EFV) manufactured from titanium alloy recycle. Shown in the photo below is an 84 pound sprocket carrier casting. This part was cast using Dynamet’s feedstock electrode produced from 100% Ti-6Al-4V alloy turnings. The resulting mechanical properties results for both strength and ductility are superior to typical specification minimum values for conventional cast Ti-6Al-4V alloy product. Moreover, the results to date indicate that tensile properties are consistent with typical Ti-6Al-4V wrought annealed material. The Sprocket Carrier components have been machined and assembled and slated for on-vehicle performance testing. The program is targeted to provide lower cost titanium components with properties equivalent or superior to wrought properties. This will permit increased usage of titanium components for light-weighting of combat vehicles. This technology being developed for specific military components can be applied to a wide variety of titanium components for diverse applications.

**Baltic Titan Announces Issuance of U.S. Patent**

Mr Ervins Blumbergs, director of SIA Baltic titan, registered in Latvia and Baltic titan Limited, registered in U.K., is pleased to announce the August 17, 2010 issuance of U.S. Patent No. 7,776,128 B2, titled “Continuous production of metallic titanium and titanium-based alloys”.

This patent applies to nonferrous metallurgy, and more particularly, to the methods of continuous producing metallic titanium and metallic titanium alloys by the metallothermic reduction of titanium tetrachloride, and also to the devices for producing metallic titanium or its alloys.

This patent culminates several years of work and investment by Ervins Blumbergs, an inventor, and Baltic titan Ltd to the expansion of a patent family (on 10 March 2010 the patent was granted by the European Patent Office). The company believes that it will continue to build and strengthen a competitive intellectual property portfolio and make progress in efforts to test the invention on a large scale.

**New Roskill report on Titanium Metal**

Titanium Metal: Market outlook to 2015 – just published

Comprehensive review of supply and demand, with forecasts to 2015. Available to ITA members at a 10% discount for all orders received by 30th October 2010 (quote ITA with your order) - Save $700

For full details of the report including detailed table of contents go to www.roskill.com or speak Philip Dewhurst at the meeting.

It is our pleasure to introduce you to our new website. The portfolio of projects documents the breadth and depth of worldwide applications, where architecture and titanium meet. The performance and aesthetics of architectural titanium is unmatched by an other metal.

We look forward to the opportunity to consult and assist you and your team upon request. Our expertise can be beneficial during your design development and there is never a charge for our consultation services.

www.architecturaltitanium.com
Titanium News

Accushape, Inc. Announces Major Breakthrough with TiCarbonite™

Portland, OR -- ITA member Accushape, Inc., Albany, OR. announces a major breakthrough with the TiCarbonite™ titanium based material system directed primarily at ballistics applications. US patent 7,687,023 covers a multi phase titanium carbide alloy system that is very hard, very tough with a weight lower than or about the same as normal titanium alloys depending on the composition.

Very hard TiC particles form an aggregate phase bound together using a master alloy whose main ingredients are titanium, nickel, combined with titanium sponge granules in varying ratios depending on desired properties. Avoidance of the use of high density metals such as molybdenum or tungsten and the use of lower amounts of nickel, together with the ability of titanium an nickel powders to form lower melting points allow the formation of a TiC structure weighing well below the typical 6 grams per cubic centimeter of conventionally made titanium carbide.

The use of larger very hard (Vickers 3200) TiC particles in the aggregate phase which are tightly bonded by varying phases of hardness and ductility in the matrix phase creates superior energy absorption properties. In simple terms, high energy impact cracks are bounced around back and forth, absorbing energy while straight line cracking typical of brittle alloys is substantially reduced. With an average hardness of Vickers 1000 (RC 68) and low Vickers of 600 (RC 55) much harder than titanium alloys and about that of ceramic materials, the material system defeats an armor piercing projectile by blunting the pointed cone and creating brittle and ductile single cycle overload of the hardened steel penetrator. (see photo and SEM).

M2 AP BROKEN PENETRATOR-BLUNTED POINT-CENTER BROKEN FROM IMPACT OVER LOAD

The material is so tough, standard ends mills are destroyed in a few revolutions. Thus it is necessary to use powder metal net shape technology to produce useable tiles. Use of standard powder metal presses and vacuum sintering furnaces makes rapid scale up of the technology practical and economically feasible.

The material system has been shown to form solid metallurgical bonds to titanium and titanium alloys and forms an ionic bond to ceramic creating many opportunities for composite ballistics systems.

The amount of titanium used will be substantial as the total titanium content will be from 70-80%. It is difficult to make estimates of total titanium use as a combination of materials will be used in a ballistics system driven by the demands of the application and may vary from to 3 to 8 pounds per square foot.

A companion patent, US 7,793,579, for a modular armor tile design has been allowed that solves the centuries old problem of developing an armor system that has no through gaps and does not increase the total thickness of an array beyond the thickness of a single tile. Weight savings of 25% to 30% over fish scale and other dual seam overlapping system are achieved. This patent is not specific to the type of material used and thus will apply to other materials such as ceramic.

Tests indicate that the use of modular tiles results in increase multi hit capability and creates the opportunity for practical field repair of a system by allowing the replacement of individual tiles.

The TiCarbonite™ material and the unique tile design are expected to find applications to replace the more delicate ceramic systems that are prone to total failure when a monolithic tile suffers from a ballistic event or non ballistics damage. TiCarbonite™’s much higher hardness creates an advantage over conventional titanium armor plate plus the ability to bond with titanium means TiCarbonite™ can create a thinner and lighter weight system. A TiCarbonite™ ballistics system will create more than 40% weight savings over RHA steel plate.

International (PCT) applications have been filed providing coverage in all major countries of the world which incorporate the elements of the issued US patents and improvements made since their filing.

About 100 ballistics tests completed to date establish the capability of the material system to defeat rifle bullets ranging from 5.62 M855 to 7.62 M80 and armor piercing APM2.

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Titanium News

• Titanium Surgical Instruments - Up to 5000 Castings per Month
• Housings and Components for Precision Instruments
• TITAL Supplies Industry Leaders in Germany and Abroad

Bestwig, Germany. With the production of high quality surgical instruments made of titanium, the German investment casting specialist TITAL located in Bestwig, Germany wants to expand in the field of medical engineering. Titanium is well proven in the aircraft industry and is very suitable for the production of surgical instruments because it can be sterilized completely using special cleaning and sterilization methods. Titanium also has a low density while at the same time having high tensile strength and corrosion resistance. Due to the increasingly strict hygiene guidelines, surgical instruments must be sterilized after each use. In this area, titanium definitely has an advantage when compared to other materials.

TITAL currently produces ergonomically designed surgical titanium hand grips for surgical saws and hard tissue drilling machines for a market leader in southern Germany. Approximately 300 of these parts leave the production site in Bestwig each month. Manfred Lätchen, Engineering Manager at TITAL: “The advantage of the hand grips with a length of 6.3 inches (16 cm) and a width of 2.36 inches (6 cm) lies in its extremely easy handling. The grips which have a wall thickness of 0.07 inches (8 mm) are extremely thin and thus stay below the maximum weight as required by the customer. This makes working with those grips very convenient and simple.”

TITAL’s other medical customers are producers from the orthopedics sector. Due to the demands of the medical-technology sector during the last eighteen months TITAL has produced not only surgical instruments but more and more titanium castings for prosthetics and medical implants. Up to 5,000 titanium medical-technology parts are produced at TITAL every month.

For a leading medical company in Switzerland TITAL produces titanium hip joint implants. Light weight, high-strength and 100% biocompatible titanium is one of the few materials which meet the requirements of implants in the human body naturally. Titanium is known to be a chemically inactive material in the human body and is corrosion-resistant to all bodily fluids. Lätchen: “When it comes to implants it is crucial that they do not change after being adjusted into the human body. Implants made of titanium meet these metallurgical requirements.”

Titanium components for artificial extremities are also part of TITAL’s medical products portfolio. For another medical customer TITAL produces cast material for foot and knee prosthetics. As Werner Eickhoff, Sales Manager at TITAL explains; titanium castings are produced for the foot prosthetics which acts as a link between the ankle joint and the lower leg. They also serve as a mounting bracket for the tube which leads up to the knee. For knee prosthetics, TITAL produces and delivers different castings which are assembled at the customers’ facility, to complete a mobile knee joint. The advantage lies in the stability and the light weight of titanium. Additionally, the alloy supports a lot of weight: pressure up to 330 lbs (150 kg) is no problem - an essential factor especially for knee prosthetics.

One of the oldest clients of TITAL in the field of medical technology is related to TITAL since 1975. “The cooperation with TITAL is really exemplary”, says a spokesman at the client. “The cooperative approach paired with the extremely high and reproducible quality as well as a reliable delivery is impressive.” The business relations have grown over the years; they know and trust each other. “We can rely 100% on the quality of TITAL.”

About TITAL GmbH: TITAL supplies industry leading companies around the world in the field of aerospace, defense, motor sport and industrial systems with sophisticated aluminum and titanium investment casting products using the lost wax process. TITAL was founded in 1974 and in 2006 the management took over the company with the support of DZ Equity Partner GmbH - an investment company of the DZ Bank AG from Frankfurt. Today the company employs 400 people with 2009 revenue of €48M or $63M.
Titanium News

Akrapovic Exhaust: Growth Phase

The Akrapovic Exhaust Company is continuing an extensive growth phase. In just a few years, we have developed from a small workshop of just a few people to an industrial plant with over 420 employees, now active in four separate divisions: motorcycle exhaust systems, car exhaust systems, composite-based products, and our recently launched titanium casting facility.

Our strategic future plan includes constant expansion and progress. In the long term we plan to enter a number of new fields such as aerospace, medicine, chemicals, and other industries, while remaining loyal to our core business: the industry of motorcycles and cars, where our aim is also to further expand.

All of these activities are related, and we are making moves to prepare platforms for further growth and business development. One of our crucial activities is establishing various distribution concepts, which also ensures a strong presence on the market.

We therefore need to significantly enhance our presence, using various concepts and strategies such as opening branch offices and/or appointing representative agents.

We are pleased to inform you that we are opening a branch office in the US called Akrapovic America. In terms of territory, the office will initially focus on North America, but later also build links with Central and South America.

The company will mainly focus on:

- Improving brand availability and awareness
- Improving knowledge of our products and thus recognition
- Implementing business intelligence to improve monitoring, planning, and coordination
- Taking advantage of all business opportunities
- Improving after-sales service

In order to achieve these goals, we also anticipate strong commitment on your side as well. We are convinced that this is the best way to improve the quality of our service as well as increase our market share in your country. For more information visit their website at www.akrapovic.com.

Solar Atmospheres Releases a New Process to Control Compound (White) Layer Formation during Vacuum Gas Nitriding

Souderton, PA -- Solar Atmospheres announces it has established a method of controlling the amount and depth of White layer resulting from Gas Nitriding. This procedure was accomplished following extensive testing using AISI 4140 Steel in a Solar Atmospheres Gas Nitriding Vacuum furnace. Various applications requiring Nitriding often require specific White layer limits which can now be provided by this process.

Following an initial rapid pump down to produce an Oxygen free, vacuum environment, the Nitriding cycle consisted of a pre-heat at a partial pressure of Nitrogen followed by Nitriding at a slightly positive pressure using an Ammonia/Nitrogen mixture. Many cycles were performed varying the time and gas flow parameters at temperature and the resulting White layer composition and thickness determined. The key to controlling the White layer formation was the introduction of a Boost-Diffusion technique during the Nitriding phase. Surface hardness and depth of nitride zone were then recorded from microhardness measurements and metallography.

All this data was compiled to establish Nitriding procedures that provide the final desired structure in the minimum cycle time. This includes processes that produce the minimum depth or complete absence of White layer as dictated by the final application of the parts.

A complete technical paper outlining the entire program can be reviewed on our web site – www.solaratm.com

Accushape Inc.
Continued From Page 6

Accushape expects to license the technology for large scale production while completing prototype implementation and final NIJ 2006 qualification tests.

For further information contact Robert G. Lee, President at accushapeinc@msn.com
NEW MAKINO A51NX AND A61NX HMCS EXTEND MACHINING CAPABILITIES

New a51nx and a61nx horizontal machining centers offer larger work envelope and next-generation productivity, accuracy and reliability.

Mason, OH – Sept. 2010 – Makino’s new a51nx and a61nx horizontal machining centers extend the capabilities of the highly successful a-series with a host of technologies for next-generation productivity, accuracy and reliability. Designed with larger work envelopes, improved casting designs and spindle and axis guide enhancements, the nx machines offer rigidity, speed and precision far beyond that of typical 40-taper machines.

The a51nx and a61nx models boast expanded axis travels to accommodate larger parts or more parts per fixture. The a51nx features a 560-mm (22.0-inch) X-axis and extended Y- and Z-axes of 640 mm (25.2 inches) for an industry-leading total axis volume of 8.1 cubic feet. Its additional Y stroke yields a 14 percent larger working envelope.

The standard a61nx features a 730 mm (28.7 inches) X-axis, 650 mm (25.6 inches) Y-axis and extended Z-axis of 800 mm (31.5 inches). An optional tall column on the a61nx expands the Y-axis to 730 mm (28.7 inches), making it beneficial for large die-cast or near-net-shape applications. Thanks to the expanded Z-axis stroke, maximum tool length on the a51nx and a61nx models is increased to 430 mm (16.9 inches) and 510 mm (20.1 inches), respectively.

Increased Spindle Power - The a51nx and a61nx machines offer new, more powerful standard and optional spindles. The standard spindle is a 14,000-rpm design with 240 Nm of duty-rated torque and 22 kW of continuous output, a 19 percent increase over the previous model. An optional 300-Nm spindle designed for high metal-removal rates in ferrous applications is also available. Along with the two new spindles, the current 20,000-rpm core-cooled spindle remains available as an option on the a51nx and a61nx machines.

Higher Machine Strength and Rigidity - Casting design and axis guide improvements of the nx machines deliver higher stiffness, load capacities and precision. A new crossed roller guide design yields improved rigidity for higher metal-removal rates, reduced vibration and improved tool life.

Several major casting enhancements coupled with the use of cross roller guides enable customers to effectively use the additional 14 percent Y-stroke.

Improved Productivity - The nx machines are designed with a 1G-axis acceleration supplemented by high-power servo motors and enhanced casting rigidity for faster acceleration.

Additionally, nx models have a standard Direct Drive (DD) motor B-axis table for dramatically faster indexing time over the previous worm-gear-driven NC rotary table (NCRT). The motor includes an inertia control system that adjusts table speed and acceleration based on pallet payload. Due to the speed of the DD motor, may lead to fewer machines required in high-volume, high-tool-count automotive applications. The DD motor table also reduces B-axis complexity and eliminates backlash and key component wear.

Expanding Reliability - Makino’s a-series machines have a reputation for reliability as well as low maintenance. The nx machines leverage this proven design to advance reliability with new features.

The ATC shutter door typically sees millions of cycles over the life span of a machine. On nx machines, a high-speed servo-driven ball screw actuates the ATC shutter door, improving responsiveness, ease of setup and maintenance. The servo axis also reduces exposure of the ATC to the work envelope. The net result is improved reliability and cleaner ATC environments.

About Makino - world leader in advanced CNC machining centers, Makino provides a wide range of high-precision metal-cutting and EDM machinery, including horizontal machining centers, vertical machining centers, 5-axis machining centers, graphite machining centers, and wire and Ram EDMs. Our flexible automation solutions provide reduced labor costs and increased throughput in a variety of production volumes and designs. With Makino engineering services, we offer industry leading expertise for even the most challenging applications across all industries. For more information call 1.800.552.3288, or visit www.makino.com.
ADMA Products Inc., a Ti and advanced material solid state P/M company, to lead $4.4 million DOE ARPA-E project that will increase performance while greatly improving the efficiency of all air conditioning/cooling/dehumidifying units. Lower greenhouse gases, less electricity to be consumed, no loss in performance!

ADMA Products Inc. (a dba of Advance Materials Products Inc.) of Hudson, Ohio is a solid state consolidation powder metallurgy company that has been in business for over 25 years producing high application products from titanium, niobium, zirconium and other advanced materials. This week ADMA received an award from the US Department of Energy ARPA-E program to develop a “High efficiency, On-Line Membrane Air Dehumidifier for Enabling Sensible Cooling in Warm and Humid Climates.” When completed the project will increase the cooling capacity of air conditioning units while using considerably less energy than current technology. This is a three year and $4.4 Million project that ADMA, as team leader, will conduct with the participation of Pacific Northwest National Laboratories (PNNL). The DOE ARPA-E Public Release Summary is in the attachments to this email.

ADMA works with every branch of the US Armed Forces; the Department of Defense; the Office of the Secretary of Defense; the Department of Energy; the Pacific Northwest National Laboratories, the ARMY Research Laboratory (ARL), the Naval Research Laboratory (NRL), the Armament Research Development and Engineering Center (ARDEC), and many other US Defense and National Research laboratories. ADMA works with NASA; all major aircraft manufacturers; the major automotive, truck and heavy equipment manufacturers, and the medical implant industry.

The ADMA porous plates to be made under the DOE ARPA - E award #0289-1530 will increase the cooling capacity, while lowering the energy consumption, of air conditioning and dehumidifying units. The beneficial environmental, greenhouse and energy consumptive impact of the process developed by ADMA in conjunction with PNNL and DOE will be tremendous. The ADMA process will set a new attainable energy standard for all future air conditioning units as well as replacement parts for units in existence today. In addition to the many other products ADMA makes from advanced materials, ADMA currently produces similar porous titanium plates to separate oxygen and hydrogen from water. The hydrogen is used for actively cooled systems, stand alone hydrogen supply, water electrolysis that generates oxygen for use in life support systems, and hydrogen for electronic microchip production. Such porous plates are also used to separate water from fuel in plants for the manufacture of biofuel and for “portable power”.

ADMA has been an active participant in major defense initiatives of the past 25 years including the Defense Manufacturing Technology Objective (ManTech), the United States Industry Coalition (USIC), with whom ADMA participated in the Global Initiatives for Proliferation Prevention (GIPP); and it is a member of the International Titanium Association, to name just a few of the defense and commercial relationships that ADMA maintains.

This year ADMA will again introduce its latest achievements in Hydrogenated Titanium Powder Production to the defense and industrial communities during presentations to be made at the International Titanium Association Conference in Orlando Florida (October 3-6, 2010) and the Defense Manufacturing Conference (DMC) to be held in Las Vegas, Nevada November 29 - December 2, 2010. ADMA patented Hydrogenated Titanium Powder provides the superior properties of ingot based titanium at a fraction of the ingot based product’s cost.

It took thousands of years for steel reach its currently relatively low price. Aluminium was worth more than its weight in platinum when it first went into limited production over 100 years ago. Titanium is a metal that is stronger than steel or aluminum and it is less corrosive than both. Titanium is 40% lighter than steel and in application is lighter still because a smaller quantity of titanium is needed to achieve strength that meets or exceeds that of steel. Titanium approaches the weight of aluminum and, unlike aluminum which produces a galvanic response, can be used in contact with increasingly specified carbon fiber.

In recent years ADMA has received Congressional support to improve personal and vehicle armor and to increase titanium powder production in America. The goal was to better protect our fighting men and women with improved armor while saving money and energy for America. With the additional and continuing support of Senator Sherrod Brown, Congresswoman Marcy Kaptur, and Congressman Steve LaTourette, ADMA, America, and Ohio have crossed the threshold of world leadership in important and strategic materials that will improve our lives and our environment. These advances will lead a revival of American Industrial Base and skilled, well paid, jobs for Americans.
Titanium News

BLUEWATER CHANGES NAME AND IDENTITY

Bluewater Thermal Services is now known as Bluewater Thermal Solutions. This change in Corporate Identity also includes a new logo & website (www.bluewaterthermal.com).

According to Terry Brown, Director – Commercial, “This change was made to better reflect what Bluewater offers and supplies to our customers. We want our customers and prospects to think of Bluewater Thermal Solutions when they have a problem with a material or manufacturing process that requires any kind of thermal process. Bluewater has the talent, experience, and desire to work with them to propose and deliver creative and innovative solutions.”

Bluewater Thermal Solutions owns and operates 17 thermal processing facilities in the U.S. and Canada. These facilities provide engineered solutions to manufacturers that require components and materials to be processed for improved strength, wear, or corrosion properties. Bluewater services the needs of the automotive, heavy equipment, aerospace, and energy industries. Contact Terry Brown, Director – Commercial for more information (tbrown@bluewaterthermal.com).

Arcam wins order for EBM-system for Walter Reed Army Medical Center

Arcam AB has received an order for an EBM system from Walter Reed Army Medical Center in Washington, D.C., USA. The system will be used for manufacturing of advanced patient matched implants.

The Walter Reed Army Medical Center (WRAMC) is the United States Army’s flagship medical center. Located in Washington, D.C. it serves more than 150,000 active and retired personnel from all branches of the military. Walter Reed 3D Medical Applications Center is a leader in patient therapy based on advanced patient specific implants.

- " With the additive manufacturing system on site at our facilities for building custom implants and fixation devices, we will be able to offer the most advanced patient specific implant treatment with minimum lead time. We see the possibility to greatly improve the outcome in those often complicated surgical treatment procedures. We much look forward to having the new EBM system installed,” says Dr Stephen L. Rouse, Director at the 3D Medical Applications center at WRAMC.

- " We are happy that WRAMC selected the EBM technology from Arcam for its most advanced patient specific program. This order from WRAMC, the first from a hospital, opens up new medical applications for Arcam.” says Magnus René, CEO of Arcam.

For further information:
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Perryman Company Announces Finishing Expansion Continued From Page 4

into new areas and to diversify its product portfolio. The expansion focuses on round bar sizes 1.00” (25 mm) and larger and will include a wide range of alloys currently processed by Perryman. When combined with the previously implemented backward integration facilities, Perryman will be in position to serve its bar customers with industry leading lead-times. “Consistent and reliable supply to our customers, regardless of market conditions, remains as our core goal” remarked Perryman.

Groundbreaking for the expansion has already occurred and new equipment is on order. The company has targeted September, 2011 for completion of the facility.

Perryman Company, founded in 1988, is headquartered in Houston, Pennsylvania. Company offices are located in Philadelphia, Los Angeles, London, Zurich, Tokyo and Xi’an. Perryman is an integrated titanium producer from melting of ingot to finished products. The company’s product portfolio includes ingot, bar, coil, fine wire, net shapes, and hot rolled products. A titanium global leader, Perryman supplies and services customers in the aerospace, medical, consumer, industrial and recreation markets worldwide.

C A D T O M E T A L ®

Arcam develops and manufactures systems for Additive Manufacturing of complex metal parts directly from 3D CAD drawings. Arcam’s EBM® (Electron Beam Melting) technology enables production of metal parts with optimized properties in small and medium-size volumes. Arcam’s market is global with customers within primarily the implant and aerospace industries who capitalize on the EBM® technology’s capacity for cost-efficient manufacturing of products with extended functionality. The company was founded in 1997 and is listed on the Nordic Growth Market since 2000. The main office and production is located in Mölndal, Sweden, with subsidiaries in Italy and the US. Arcam AB (publ) | Krokslätt Fabriker 27A, SE-431 37 Mölndal, Sweden | Phone: +46 31 710 32 00 | www.arcam.com
Titanium News

The Defense Metals Technology Center Nominates Titanium Bridge Design Competition and Executive Director for Titanium Achievement Award

Throughout 2009 and 2010, the Defense Metals Technology Center (DMTC) sponsored a unique and creative Bridge Design Competition for university architecture, engineering, and industrial design students to devise what will be the world’s first bridge made completely of titanium.

DMTC is nominating this event for the International Titanium Association (ITA) Achievement Award for 2010. This is an award that recognizes outstanding contributions to the advancement of technology and applications in the titanium industry.

“The Competition proved that armor quality and structural titanium can readily be applied to meaningful commercial projects”, says DMTC Executive Director, Charles Clark. “In turn, such interest should heighten the demand for titanium and thus lead to the creation of new jobs.”

Charles Clark, a former Vice President of the University of Akron, whose previous career had been as a corporate executive and entrepreneur, will be included as a co-nominee.

The Defense Metals Technology Center (DMTC), headquartered in North Canton, Ohio, was created by the United States Congress and is a U.S. Army Center of Excellence.

North Canton is geographically central to what the DMTC calls America’s Metals Heartland, where the nation’s metals industry traditionally has been strongest.

The Center’s mission is to work among the nation’s industrial, academic, and military sectors in fostering the development of innovative cost-saving techniques for the advancement of strategic metals’ production – particularly titanium – in America’s Metals Heartland and throughout the country.

The Design Competition is part of an overall strategy to further the DMTC mission. It has already brought extraordinary worldwide attention on the Internet as well as from newspapers and trade publications, explaining the attractiveness and benefits of titanium.

The titanium bridge, when built, will help solve a logistical problem at the University of Akron, where a dormitory and conference center are separated from the main campus by busy CSX railroad tracks which made for a precarious crossing for the students.

The DMTC offered scholarship money to students on the First and Second Place teams and three Honorable Mention teams. Likewise, it offered grants to the winning universities for the study of specialty metals, including titanium, in commercial applications.

Some 16 university teams entered the contest and nine submitted drawings and appeared before the judges.

A blue-ribbon panel of judges announced the five winners at a dinner and awards ceremony in May, 2010 in Akron, Ohio. Guests included Akron Mayor Don Plusquellic and University of Akron President Luis Proenza, among other military and titanium industry notables.

The University of Akron Blue Team won First Place, while judges chose Ball State of Indiana for Second Place. First Honorable Mention went to the University of Akron Gold Team. Second Honorable Mention was Kent State University and Third Honorable Mention was Miami University of Ohio.

The designs were extraordinary and received much media coverage, including the winning design projected on the electronic billboard on Times Square in New York City.

When the bridge is built, it will serve as a symbol of the vitality of titanium production while promoting the importance of titanium to America’s economy and national defense.

The success of the Bridge Design Competition, under the direction of Mr. Clark, compelled the DMTC to nominate them with confidence for the 2010 ITA Achievement Award. For information, contact the Defense Metals Technology Center at www.defensemetals.com.
Titanium News

ALD IS UP TO SPEED - 50 by 5

Hanau, September 01, 2010 -- ALD Vacuum Technologies GmbH (“ALD”), a wholly owned subsidiary of AMG Advanced Metallurgical Group N.V., celebrated a milestone with the delivery of the 50th ALD Titanium Vacuum Arc Re-melting (VAR) furnace within the past 5 years. The furnace was delivered to a key customer in China.

The 50 titanium re-melt furnaces delivered within the past 5 years in addition to the 100 plus VAR furnaces installed for steels and special alloys brings ALD’s estimated market share to 90% of the market for VAR furnaces capable of producing 5 ton ingots and greater.

For most titanium production process routes, the re-melting of titanium is accomplished by use of VAR furnaces. ALD designs and builds VAR furnaces capable of producing ingot sizes from 200 mm up to greater than 1300 mm.

ALD, part of the Engineering Systems Division of AMG, designs, engineers and produces advanced vacuum furnace systems and operates vacuum heat treatment facilities, primarily for the Aerospace and Energy (including solar and nuclear), Communication and Material Science industries. Through its over 100 years of experience and offices around the world, ALD is a leading global supplier of vacuum furnace technologies. Furnace systems produced by ALD include vacuum remelting, solar silicon melting and crystallization, vacuum induction melting, vacuum heat treatment and high pressure gas quenching, turbine blade coating and sintering. AMG also provides vacuum case-hardening heat treatment services on a tolling basis.

About AMG
AMG creates and applies innovative metallurgical solutions to the global trend of sustainable development of natural resources and CO2 reduction. AMG produces highly engineered specialty metal products and advanced vacuum furnace systems for the Energy, Aerospace, Infrastructure and Specialty Metals and Chemicals end markets. AMG consists of two operating divisions, Advanced Materials and Engineering Systems, and owns interests in publicly-listed companies Graphit Kropfmühl AG (Deutsche Börse: GKR.DE) and Timminco Limited (TSX: “TIM”).

The Advanced Materials Division develops and produces specialty metals, alloys and high performance materials. AMG is a significant producer of specialty metals, such as ferrovanadium, ferronickel-molybdenum, aluminum master alloys and additives, chromium metal and ferrotitanium, for Energy, Aerospace, Infrastructure and Specialty Metal and Chemicals applications. Other key products include specialty alloys for titanium and superalloys, coating materials, tantalum and niobium oxides, vanadium chemicals and antimony trioxide.

The Engineering Systems Division designs, engineers and produces advanced vacuum furnace systems and operates vacuum heat treatment facilities, primarily for the Aerospace and Energy (including solar and nuclear) industries. Furnace systems produced by AMG include vacuum remelting, solar silicon melting and crystallization, vacuum induction melting, vacuum heat treatment and high pressure gas quenching, turbine blade coating and sintering. AMG also provides vacuum case-hardening heat treatment services on a tolling basis.

Graphit Kropfmühl AG is a majority controlled, publicly listed subsidiary of AMG. Based on its secure raw material sources in Africa, China and Europe, Graphit Kropfmühl is a specialist in the production of silicon metal and the extraction, processing and refining of natural crystalline graphite for a wide range of energy saving industrial applications.

Timminco Limited is a publicly listed affiliate of AMG. Timminco produces silicon metal for the chemical, aluminum, electronic and solar industries. Timminco also produces solar grade silicon, using its proprietary technology for purifying silicon metal, for the solar energy industry.

With over 2,300 employees, AMG operates globally with production facilities in Germany, the United Kingdom, France, Czech Republic, the United States, Canada, Mexico, Brazil, and Sri Lanka and also has sales and customer service offices in Belgium, Russia, China and Japan (www.amg-nv.com).

For further information please contact:
AMG Advanced Metallurgical Group N.V. +1 610 975 4901; Jonathan Costello, Vice President of Corporate Communications, jcostello@amg-nv.com

ALD Vacuum Technologies GmbH +49 . 6181 . 307-3107; Barbara Ahrens, Executive Assistant, barbara.ahrens@ald-vt.de . Visit the websites at: www.ald-vt.de www.amg-nv.com
Titanium News

Tangshan Tianhe Titanium And Sudamin: Serving The Needs Of The Titanium Industry

Based in Tangshan / China, the rapidly developing titanium sponge producer “Tangshan Tianhe Titanium” is a major producer with an actual production capacity of 10,000 mt / year (with a target of 15,000 mt over the year 2011) mainly focused on higher grades (grades 0/1). Thanks to its high quality production standard and dedicated professional team, “Tangshan Tianhe Titanium” is set to have a leading role in the titanium industry.

Based in Belgium (EU), “SUDAMIN” (an AMG group member) became, early 2009, the official worldwide sole marketing agent of the Chinese producer “Tangshan Tianhe Titanium Co Ltd” for the sale of titanium sponge. This activity is performed with the support of Metalvalue Ltd.

This marketing agency is fully integrated in AMG group’s existing titanium alloys and ferro-titanium production. For further information or request for quotation : www.sudamin.com.

Introducing the new BAHCO 3860 Multi-Chip Unset Carbide Tipped Bandsaw Blade
Bahco - the world leader in cutting exotic alloys

by Andrew Philbey - Product Manager - Bahco -- Bahco will launch a new and highly innovative bandsaw blade designed specifically to provide high speed and efficient cutting of all grades of Titanium at the TITANIUM 2010 Conference. The new 3860 Multi-Chip Unset Carbide Tipped Bandsaw Blade uses “multi chip technology” to meet the growing demands and more complex cutting needs of the Industry. Our R & D department have carried many trials and studies into the process of cutting Titanium and worked closely with our production team to put theory into practice including special edge preparation technology and tailored carbide composition to suit the needs of this material. Unlike most materials, Titanium cutting requires a very sharp edge to cut and we have focussed a lot of attention on the grinding process in this area. In summary, we believe we have the best product available on the market today and we would like to support our colleagues at the show to ensure the highest precision and productivity in their facilities in North America and around the World.

BAHCO 3860 Multi-Chip Unset Carbide Tipped Bandsaw Blade

• Special tooth geometry designed for Titanium applications.
• Unset teeth provide a better surface finish and eliminate secondary operations.
• Special grade of carbide tooth material provides maximum life and cutting performance.
• Tooth tips are fine ground to give a sharp edge, essential for cutting Titanium.
• High heat resistance allows high speed cutting even in large solids.
• Special grade backing material give long life and excellent fatigue resistance.
• Available widths : 1-1/2", 2-5/8", 3-1/8"
• Available Teeth per inch: 1.4/2, 1/1.25 and .7/1

Please join us at our Bahco Bandsaw Booth # 119 throughout the conference to discuss your cutting requirements.
Edward F. Sobota Sr., the late founder and president of TSI Titanium, Derry, PA, and Edward Rosenberg, the chief executive officer of Spectore Corp., Deerfield Beach, FL, are the respective winners of the International Titanium Association’s (ITA) annual Achievement Award and Applications Development Award.

The award winners will be honored at the ITA’s TITANIUM 2010 conference and exhibition, which will be held Oct. 3-6 at the Gaylord Palms Hotel and Convention Center, Kissimmee, FL. Jennifer Simpson is the executive director of the ITA, which is based in Broomfield, CO (Web site: www.titanium.org).

The Titanium Achievement Award recognizes exceptional career contributions to technology and applications that have benefitted the titanium industry. The Applications Development Award cites individuals or groups that have demonstrated significant advances in the expanded use of titanium.

Sobota, 65, died Aug. 7 during an aviation accident in Westmoreland County, PA. He was elected to the ITA’s board of directors in 1999 and served the group as president and vice president. According to information found on the Web site of the University of Pittsburgh 2008 Distinguished Alumni of the Swanson School of Engineering, Sobota graduated from the university in 1967 with a bachelor of science degree in Metallurgical Engineering.

He founded Tech Specialties Co. in 1973 as a process consulting firm and became chief metallurgist for Titanium West, Reno, NV, from 1974-75 while maintaining his consulting business. Tech Specialties evolved into a processing plant with a small facility in Latrobe, PA, in 1976. The plant was relocated to Derry in 1977 and incorporated as TechSpech Inc. (TSI Titanium) in October 1979. TSI is a specialty mill and supplier of titanium bar and forging products for the aerospace, medical, chemical and industrial product industries.

Dan Buwalda, plant manager, Alcoa--Howmet, Whitehall, MI, who served as the chairman of the ITA’s Achievement Award selection committee, said Sobota was recognized as an innovator to support a market niche of high-quality, small-diameter bar for a range of market segments. Buwalda noted Sobota’s commitment to mentor young engineering students and metallurgists interested in the titanium field. Sobota established the Engineering Legacy Fund at his alma mater and supported applied engineering groups at Penn State University.

“In my 28 years in the titanium industry, I consider myself fortunate to have had the pleasure to know Ed and work with him and his family,” Buwalda said. “Ed’s legacy will not only be his vision and technical expertise, but more importantly as a man of strong character, faith, family and friends. Ed touched many people over the course of his life and will be sorely missed by all.”

Michael G. Metz, president, VSMPO--Tirus US, Highlands Ranch, CO, and the vice president of the ITA, nominated Sobota for the Achievement Award. Metz, in his nomination notes, wrote that Sobota’s company focused on “providing small quantities of specialized products to users who did not need mill quantities of titanium--a niche that is important but perhaps under-appreciated in the industry. This is exactly the type of support the industry needs to grow its applications and customer base.”

Metz also lauded Sobota’s devotion to cultivating young engineers through the Engineering Legacy Fund. “He encouraged students to pursue a career in metallurgy... which is critical to the future of the (titanium) industry.”
Edward Rosenberg
CEO & Designer
Spectore Corporation

2010 Titanium Applications Development Award
In recognition of significant accomplishment towards the design and utilization of titanium in jewelry and consumer applications

Rosenberg, a third-generation master jeweler, said winning the ITA’s Applications Development Award is an affirmation of his three-decade quest to employ titanium as a material of choice to revolutionize the jewelry industry and enhance luxury consumer goods. Much like a contract manufacturer developing precision components for the aerospace or automotive sectors, Spectore houses computer design and prototyping, five-axis machining, casting, welding, anodizing and finishing operations.

“Spectore is built on innovation--not just in material development, but in processing, tool creation and a variety of innovative manufacturing theologies,” Rosenberg explained. “A great deal of what we develop has been gleaned by other industries.” Spectore proprietary’s materials, such as Black Ti™, CobaBlu™ Cobalt and BioBlu™ 27, are used to craft jewelry and accessories in the Edward Mirell line and other private-label brands.

From the moment he first laid eyes on titanium in a laboratory at the Royal College in the UK, Rosenberg said his vision was “to have titanium establish its rightful place alongside gold, silver, and platinum” as a new precious metal for jewelry. He confessed to being initially seduced by titanium’s beauty--its surface properties and inherent potential for luster, color and texture. However, he quickly realized that artistic inspiration alone would not be enough to bring his vision of titanium jewelry to reality.

“Though I had begun working in titanium in the late 1970s as an artisan, it became evident that if I was to realize my dream I would have to apply science and technology to the artistry of creation,” he said. “From that realization, Spectore was born in 1983 and my journey from artist to design manufacturer began.

“The funny thing is that, as a designer, I always frowned on technology--thinking it would compromise artistic skill,” he continued. “The fact is that you actually have to be better at your skill to work in this arena. Once that expertise is fine tuned, the end result of that marriage of art to technology will yield consistently flawless products, which will far exceed the precision and quality possible from a hand-crafted product.”

Born in New York in 1947, Rosenberg holds a bachelor of arts degree in Fine Arts from City College, NY. For 40 years, working as a jeweler and gemologist, he has achieved wide recognition within the jewelry industry.

Brett S. Paddock president chief operating officer of Titanium Industries Inc., Rockaway NJ, and the ITA’s secretary and treasurer, was the chair of the Titanium Applications Committee.

Last year, Robert Hill Jr., president, Solar Atmospheres-Western Penn, Hermitage, PA, and Gus Pietsch, the director of mechanical specialty design and part owner of Hydroscience Technologies, Mineral Wells, TX, respectively garnered the ITA’s Achievement Award and Applications Development Award.

ITA Accepting 2011 Nominations

The ITA is seeking nominations for the 2011 Titanium Achievement Award Recipient. Members may nominate an individual within the titanium industry who has exhibited outstanding qualities of leadership, and has been responsible for accomplishments that positively impact the titanium community. Complete details can be downloaded directly from the ITA website at www.titanium.org.

2011 Titanium Applications Development Award

The ITA is seeking nominations for an individual, group of individuals or organization within the titanium industry who has shown significant achievement towards improving and expanding the use of titanium. For more information on how to submit a nomination visit the ITA website at www.titanium.org.
service our customers. For repeat business, TI use the STRATIX Customer Part Specification function, which allows a salesperson to enter the Quote or Sales Order using the customer’s part number. This allows for consistency, saves times, and reduces the chance of keying errors. TI also use the STRATIX plate cutting functions to meet their increasing water-jet plate cutting business. Brett Paddock, President and Chief Executive Officer at Titanium Industries, added, “The STRATIX Order Status Desktop has been a tremendous asset to our business. It shows a clear and comprehensive status of the customer order in a single view. We can see where exactly the material is at each stage of processing, including outside processing, or transport planning and shipping. This is especially helpful since we record all production on the shop floor. Sales staff no longer need to hunt down orders and can respond to customer inquiries rapidly and with confidence.”

Certification
Quality and Certification are an integral part of Titanium Industries operations. Meeting customer and industry certification and specifications requirements was a critical objective of implementing STRATIX. To this end, Titanium Industries implemented the STRATIX Metal Standards and Specifications features that enable material to be bought, inventoried, and sold to multiple ‘Metal Standards’ specifications. These Metal Standards represent industry-specific specifications such as ASTM, SAE, MIL, AISI, etc. As material is applied to orders, STRATIX verifies that the material applied meets the single or multiple metal standards requested by the customer.

Shop Floor Operations
To further increase productivity, quality and order status information, Titanium Industries implemented the STRATIX shop floor production functions to record production in a real-time manner directly from work stations. By comparing these results to the estimates computed by STRATIX, TI is able to determine their machine and processing efficiency. To complement the shop floor operations, TI are also printing the STRATIX bar coded tags at receiving and production. When combined with the STRATIX WiFi PDA function, the bar codes ensure that material is correctly identified.

About Titanium Industries: Titanium Industries, Inc. is the world’s largest metal service center and manufacturing distributor of titanium for aerospace, medical, and general industrial applications. They carry all products required to meet their markets, such as bar, billet, sheet, plate, pipe, fittings, fasteners, weld wire, and tubing, as well as High Performance Metal products marketed under the name HPM that include Nickel Alloys, stainless steel, copper, aluminum, cobalt, and zirconium products. Materials manufactured to ASTM and ASME specifications are available for quick turnaround requirements, as well as longer lead construction requirements. Titanium Industries’ state-of-the-art facilities include some of the industry’s most sophisticated equipment, with the following processing capabilities: sawing, water jet cutting, and shearing, grinding and planning. Titanium Industries also offers a full array of customer solutions such as Just in Time, Vendor and Customer managed inventory programs, all handled through Stratix to meet the needs of the diverse global customer base. In addition to their facility and headquarters in Rockaway, New Jersey, Titanium Industries has 11 other metal service center locations in the U.S., Canada, UK, Taiwan, and India, as well as locations in Norway under the wholly owned subsidiary, Global Metal Trading (GMT). The implementations of Canada and components for the A350 and A320 aircrafts, including the manufacture of seat tracks for the A350 and flap tracks for the A320 for ten and five years, respectively.

Dawne S. Hickton, Vice Chairman, President, and CEO commented, “I am very pleased that RTI and Airbus could craft a mutually beneficial solution that matches Airbus’ near-term demand forecast for titanium mill products while driving more fabrication business through RTI’s operations beginning in 2011. This solution further strengthens a long-standing, valuable relationship and enhances RTI’s role as a key strategic supplier to Airbus of not only titanium mill products but also fabricated titanium parts. This demonstration of RTI’s fabrication and machining expertise also enhances our ability to win additional work packages on the next generation of commercial and defense aircraft.”

Ms. Hickton concluded, “As a result of Airbus’ additional order for 2010 and other new business, we now have visibility to approximately 9.0 million pounds of titanium mill product for this year.”

Eric Zanin, Head of Material Procurement for EADS/ Airbus, confirmed, “This deal strengthens the ongoing relationship between Airbus and RTI.”
ITA would like to welcome these new members:

**Akrapovic D.D.**
Akrapovic D.D. is a manufacturer of top quality exhausts, carbon/composite parts and foundry products.

**Arcam AB**
Since the birth of Arcam, our vision has remained the same: to revolutionize the art of manufacturing complex parts. Our technology is the result of intensive research and development and has a wide array of applications within the Medical Implant industry and the Aerospace & Defense industry. In addition to the industrial applications the EBM® technology is also a platform used for very active academic research. Arcam offers a complete portfolio of EBM® machines, auxiliary equipment, software, powder metals, service and training to support our customers. Arcam today has about 50 installations throughout the world. The systems are predominantly used in aerospace and implant applications. The EBM® technology is patent-protected in 24 countries including Sweden. The trademark Arcam is protected in 21 countries.

**Architectural Titanium LLC**
Architectural Titanium provides the most experienced consultants for worldwide applications in architecture, art and design. We look forward to the opportunity to share our expertise and support your design concepts through the entire process of samples, details, specifications, procurement, fabrication and installation.

**Argex Silver Capitol Inc**
Argex is a junior titanium, iron, vanadium and magnesium explorer with projects in Quebec, Canada

**BioRtechnologies of Brazil**
BioRtechnologies is a distributor of titanium, was founded in 2004. BioRtechnologies is certified according to the ISO9001:2008. We offer high performance materials forms such as bars,plates,sheets,wires. BioRtechnologies has the largest inventory to 6Al 4V ELI, Grade 2 and Grade 4 in Brazil. We supply to medical industry only.

**Bluewater Thermal Solutions**
Bluewater Thermal Solutions is the largest North American-based heat-treating provider with 17 locations across the U.S. and Canada, providing heat-treating solutions serving over 6,000 customers. Bluewater serves industries, not limited to, auto, agriculture, aerospace, trucking, mining, castings, and stamping, to name a few. Bluewater boasts a variety of process solutions, including brazing of stainless and low-carbon- steel. We also have a full range of heat-treated furnaces: vacuum, batch, continuous belt, roller hearth, rotary and induction. Bluewater specializes in aluminum heat-treat, nitriding powder-metal heat-treat, tool-steel heat treat and press quench. We also offer metallurgical testing to and for our customers product.

**CSIRO**
Drawing on CSIRO’s expertise in fluidized bed technology, Light Metal Flagship researchers have developed a process that continuously produces titanium metal powder.

**Dalian BHN Special Materials Ltd.**
We are a consulting company based in Dalian P.R. China, founded in 2008. We provide consultant service for the supplier of high performance metal and high-grade master alloys.

**Dat Quang Chu Lai Minerals Joint Stock Co**
Members of Board of Director are persons who lives far from hometown and always have a dream of coming back to build their hometown. The policy to establish Chu Lai Opening Economic Zone approved by Government is the opportunities for them to contribute their merit in their birthplace. In March, 2006, Dat Quang Chu Lai was established. It is also proud of one of first enterprises to be licensed to invest in Chu Lai open economic zone; create jobs for thousands of people and contribute their merit in modernization of the province.

**Edison Welding Institute**
Since the early 1980s, EWI has helped manufacturers in the aerospace, automotive, defense, energy and chemical, government, heavy manufacturing, and electronics industries improve their productivity, time to market, and profitability through innovative materials joining and allied technologies. Today, EWI provides applied research, manufacturing support, and strategic services to nearly 2,800 member company locations worldwide.

**Fluor Corporation**
Fluor Corporation is one of the world’s largest publicly owned engineering, procurement, construction, and maintenance services companies. Over the past century, Fluor, through its operating subsidiaries has become a trusted global leader by providing exceptional services and technical knowledge. Clients rely on Fluor to deliver world-class solutions that optimize their assets, improve their competitive position, and increase their long-term success. Consistently rated as one of the world’s safest contractors, Fluor’s primary objective is to develop, execute, and maintain projects on schedule, within budget and with excellence. Our outstanding dependability,
2010 New Members

expertise, and safety performance distinguish Fluor as the preeminent global leader in the building services marketplace.

Hangzhou King Titanium Co., Limited
King Titanium is an intermediate manufacturer and full-service distributor of premium titanium mill products. We specialize in supplying titanium mill products to machine shops, fabricators, prime contractors and sub-contractors for aerospace, automotive, chemical, medical, oceanographic, oil & gas, semiconductor, recreational and other industries worldwide.

Hermes Abrasives Ltd.
Hermes Abrasives specializes in producing high quality abrasives products that meet the exacting standards of production oriented customers. Hermes manufacturers complete lines of both coated and bonded abrasives.

Hetran Inc.
Hetran Incorporated, in business for 40 years and known worldwide for quality built machinery and reliable service, now offers a ‘new generation’ of advanced technology machines for bar to bar, coil to coil and coil to bar production requirements. Hetran’s complete service capability makes it the single source for all ferrous and non-ferrous finishing requirements. With total engineering and manufacturing ability, Hetran provides superior finishing requirements from design to set up. The general markets for Hetran’s machinery are steel mills and processing companies located worldwide with the target market defined as those mills demanding high quality steel products for limitless possible applications. Our technical production support and service team is unmatched. Service technicians are available throughout the world for dependable maintenance and production support to maintain peak performance and quality. The operator-friendly designed machines use the most advanced concepts available today, and are available with a choice of any international standard of electronics and hydraulics for compatibility. The Hetran machines allow multiple operations (simultaneous or selective) in closed manufacturing cells incorporating any of the above machines. These Hetran lines are superior for the production of high quality material. Hetran has installed machinery not only in the USA but also worldwide.

Himet Titanium Co., Ltd.
Established as a machine shop several years ago, we have grown to become a manufacturer and have the full capacity to cut, bend, machine and weld titanium products. We are making fasteners, welded parts, machined parts and custom products in titanium, tantalum and zirconium for racing, medical, offshore, marine, sporting chemical and other industry market. Besides these, we are supplying titanium bars, wires and powder as well.

Hunter Minerals Pty. Limited
Hunter Minerals Pty Ltd is a professional advisory organization which provides technical advice and management for titanium and related metals projects in the northern hemisphere.

Industrial Metals International Ltd.
IML is a supplier of bar, sheet, tube, wire, rings and forgings in aluminum, titanium, nickel stainless steel, alloy and bronze products. In business for over 40 years, IML is approved by companies such as Rolls Royce, Boeing, Airbus, and Pratt and Whitney. Located near JFK Airport in NY, IML is able to offer same day shipping to countries worldwide with no minimum order charge for stock items.

Materials and Electrochemical Research (MER) Corporation
A materials and process R&D organization with product demonstration. The technologies MER pursues includes: Electrochemical Systems, Porous Materials, coatings, Nanotechnology, Composites, Rapid Manufacturing, Spinel and Titanium. MER develops processing to produce titanium more economically that includes reducing the cost to produce lower cost sponge and down stream processing to produce low cost titanium components. These technologies include producing titanium powder directly from ore/TiO2 at a cost approximately ½ that of Kroll sponge, engineering the Kroll process entirely in one reactor at a reduced cost, producing titanium alloy powder from ore/TiO2 and one-step processing near net shape alloy components at a costs of under $10/lb.

Metalysis Ltd
A young dynamic IPR company exploiting the FFC process to produce high-value, specialist metals and alloys. The company is scaling up the technology to enter niche markets and gain market share from established production processes.

MetCon, LLC
MetCon is a metal conditioning and titanium alpha-case removal company employing novel proprietary “Green” technology.

Minera las Cautivas
We own titanium Ore mines in Mexico, actual % TiO2 50%-53%. As we are direct owners of mine we allow mine visits, samples etc.

Northrop Grumman Information Systems
Our business unit provides Enterprise Recourse Planning
2010 New Members

Qinghai Supower Titanium Co., Ltd.
Produce the titanium ingots and slab by the electron beam cold hearth melting furnace.

Quebec Metallurgy Center
The Quebec Metallurgy Center (CMQ) is a collegiate center of technical transfer located in Trois-Rivières, Quebec, Canada. We will conduct research and development projects on advanced alloys such as titanium, zirconium or cobalt. The areas of research are the vacuum melting, casting, hot isostatic pressing, welding and heat treating.

Reactive Metals Studio
Founded 1981, Supplier of exotic metals to include titanium and niobium to the jewelry and decorative arts market. We consult, teach and supply anodizing equipment and supplies. We supply jewelry components and findings in titanium. We are small order specialists catering to the arts and crafts community.

Texas A&M Health Science Center
Baylor College of Dentistry
This business is a dental college. The department of Biomaterials Sciences conducts research with Titanium for dental applications.

Ti Squared Technologies, Inc.
Ti Squared Technologies specializes in low cost, net shape titanium/zirconium investment castings for the commercial, industrial & consumer markets. Our applications out-perform stainless steel and aluminum where greater strength, lighter weight and superior corrosion resistance are required. Value added operations such as finish machining, polishing and assembly are offered.

Timesavers International B.V.
Manufacturer of wide belt grinding and sanding machines for metal, exotic materials and wood working industry.

Titanium Processing Center
Titanium Processing Center is a stocking titanium distributor and supplier. We supply titanium products to the chemical, industrial, aerospace, medical and others. We offer saw cutting, waterjet cutting, machining and fabricating along with other value added services.

Trepanning Specialties, Inc

Trulife, Inc.
Trulife is internationally based and totally engaged in the creation, development, manufacture and marketing of niche healthcare products. The Group activities encompass Orthopaedics, Breastcare, Prosthetics, Pressurecare Products and Walking Aids.

University of Northern Iowa - Metal Casting Center
UNI’s metal Casting Center, established in 1989, has achieved unique stature as the premiere not-for-profit US research and development facility specializing in manufacturing technologies and materials for the metal casting industry. The MCC testing laboratory and pilot-plant demonstration facility are the most advanced of their kind. The center’s primary mission is to assist the foundry industry by developing technical solutions to keep this primary industry competitive in a global economy.

University of Utah
Powder metallurgy Ti materials and processes research and development, with emphasis on Ti alloys for medical implant applications.
The Titanium Metal Consortium has approved the Letter of Access agreement.

The fees associated with the letter of access (LOA) are based upon the preliminary response from the sameness surveys. If we receive more definitive feedback from the SIEF this would precipitate a more accurate prediction of revenues and may possibly reduce the fees for all if there is indeed a revenue surplus.

The fee structure for the LOA is simply based on 2 tonnage bands:

<table>
<thead>
<tr>
<th>Tonnage Band</th>
<th>LOA Fee</th>
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<tbody>
<tr>
<td>&lt; 1,000 metric tonnes per annum</td>
<td>40,000 EUR</td>
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<tr>
<td>&gt; 1,000 metric tonnes per annum</td>
<td>60,000 EUR</td>
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There will be a 10% reduction in the LOA fee for those registrants who are in a tonnage band lower than 1,000 tonnes, but who still wish to have the letter of access and register before 1 December 2010. The reduced rate is therefore 36,000 EUR.

For SIEF members who are not full members of the Consortium, the LOA should be applied for and issued to each legal entity which is planning to register titanium.

For those members of the SIEF who are contemplating becoming a full member of the Consortium, please be advised the General Assembly has approved a deadline of 1 October, 2010 for full membership when the work of the consortium will be effectively finished and the joint registration dossier will have been submitted.

If you wish to register for the letter of access contact:

International Titanium Association (ITA)
Secretariat for REACH Titanium Consortium
secretariat@reachtitaniumconsortium.org  Email
001-303-404-9111  Facsimile

Up to date information may be found at the Titanium Metal Consortium Website www. reachtitaniumconsortium.org or you may contact the ITA by email or phone at 001-303-404-2221 or secretariat@reachtitaniumconsortium.org. We look forward to answering any questions you might have.
ITA Workshops

Fundamentals of Titanium Workshop

For over ten years, the ITA has presented the premier course on everything Titanium. This comprehensive workshop has been presented all over the world and in several languages.

This comprehensive workshop provides detailed information on the types, uses, and properties of common titanium alloys. You will gain an understanding of applied titanium metallurgy fundamentals.

Course Objectives & Content Fundamentals of Titanium will prepare you to present and work effectively with job-related functions that involve titanium. You will receive a complete overview of titanium and a thorough grounding in its metallurgy, characteristics, properties and uses.

In person workshop:

The ITA will also host 2 US workshop opportunities in Orlando, and Los Angeles. The cost for members is $229 for the full day workshop. The fee includes lunch and workshop materials.

Upcoming Workshop Dates & Location:

**Sunday, October 3, 2010**
(in conjunction with TITANIUM 2010) Gaylord Palms Resort and Convention Center
Meeting Room: Osceola 2
6000 W Osceola Parkway
Kissimmee, FL 34746 USA

**Friday, November 12, 2010**
Bodycote Santa Fe Springs
9921 Romandel Ave
Santa Fe Springs, California 90670

To register online visit the ITA website at: http://www.titanium.org/Category.cfm?CategoryID=220

Welding of Titanium Workshop December 1, 2010

Any individuals wishing to learn how to weld titanium correctly or wishing to learn how to weld titanium more effectively will benefit from this workshop. Techniques will be discussed unique to titanium not readily apparent in other metal joining. The course will discuss various forms of titanium joining like Electron Beam, Laser, MIG, TIG and Plasma. Primary focus will be on the GTAW (Gas Tungsten Arc Welding) or Tungsten Inert Gas (TIG) method for joining titanium. Individuals will also learn to deal with the challenges of everyday fabrication in the true shop environment. Titanium can and is welded every day in the open shop environment for the most stringent and critical applications and you can too.

Join us for this 1-day workshop to learn how. This Workshop will provide information on the following categories:

- Titanium History & Background
- Characteristics – What is important for welding.
- General Manufacturing/Welding Processes Used
- Joining: Weldable Materials and Filler Materials
- Preparation for welding, cutting and cleaning
- Equipment to use, how to set it up
- Correct Titanium Techniques
- Welding practice
- Post Welding Issues
- Metallography
- Quality Control, WPQR and WPS
- Stress Relieving
- Safety

Location:
Edison Welding Institute
1250 Arthur E Adams Drive
Columbus, OH 43221

Register online at:
http://www.titanium.org/Category.cfm?CategoryID=221
**Classified Ads**

Full details of the classified ads can be found on the ITA website at www.titanium.org

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**Job Postings:**

Expansion at Dynamet Technology in development and production of its advanced titanium powder metal materials and components is creating staff positions for additional metallurgical engineering and technician staff. A powder metal background and/or a titanium research and manufacturing background is desirable. Exceptional capability in writing technical reports and compelling research and development proposals is a requirement for engineering and science positions.

Individual creativity with team work interest would be a good combination.

Send brief resume to:
mbkowitz@dynamettechnology.com

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**Process Development Engineer(s) (TITANIUM)**

Makino is one of the leading providers of advanced precision machining, tooling, and custom solutions for business and industry. We are currently recruiting unique types of Process Development Engineers! These individuals will join our R&D team developing innovative machining techniques in Titanium for Makino machine tool products. The positions will be located in our North and South American Headquarters in Mason, Ohio (in Cincinnati, OH).

Sr. Process Development Engineer
Position will require:
- .5-axis programming knowledge
- DOE or other technical analysis experience (FMEA, root cause analysis, etc.)
- Ability to analyze, summarize and present data
- Solid model creation/manipulation
- Metallurgical background

Process Development Engineer
Position will require: In addition, qualified individuals should possess a degree in a Engineering/Science degree, 5+ years of experience with machining hard metals, specifically titanium, using CNC horizontal or vertical machines. The general description of requirements are needed for this position as noted below.

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**Material For Sale:**

Hailong Industry manufactures Seamless Titanium and Titanium Alloy tube and pipe as per SB338 and SB861, with the material of Gr.1, Gr.2, Gr.7, Gr.9, Gr.12, Nickel and Nickel Alloy tube and Pipe, Ni201, Monel400, Incoloy 600, 625, Inconel 800, 825, Stainless steel tube and pipe, duplex tube etc.. The company was ISO and PED certified by TUV. Contact Information: www.hailongtitan.com

Tel: 0086-512-58986900, Fax: 0086-512-58183187, Email Address: hailonggood@163.com

As ISO and PED Certified company, Jiangsu Hongbao Group Co., Ltd specializes in manufacturing titanium rod, tube, plate and wire. Our products are widely used in heat exchangers, petrochemical industry, aviation industry and sports appliances. Our manufacturing capability as follows:

2. Titanium and its alloy rods ASTM B 348, F 67 Diameter: 10-150mm
3. Titanium and its alloy sheets & plates ASTM B 265, F 67 Thickness: 0.7-50mm Width: <2500mm Length: <6000mm.
4. Titanium and its alloy wire according to ASTM B 863 Diameter: 0.4mm-10mm

Contact: David Dai, Jiangsu Hongbao Group Co. Ltd.
Classified Ads

Phone: 86-512-58715259 Fax: 86-512-58715267
Email: foreigntrade@hongbao.com

***********************************************************************************************

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Contact California Titanium, LLC with product inquiries.
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GfE is a leading manufacturer and global supplier of high performance metals and materials. With almost one hundred years experience in the field of materials science, the company uses this invaluable expertise in the development of tailor made materials, customized applications and solutions for our customers. GfE offers a wide range of high quality products for different specialized sectors such as:

* Aerospace industry
* Superalloy industry
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* Off-shore technology and other applications

***********************************************************************************************

Luxembourg Company of Metal and Alloys S.A. – LCMA has been established in 1996 as the integrated manufacturer and distributor of the wide range of semi product in titanium and its alloys.

LCMA is a manufacturer of the wide range of the semiforward. We start from the very beginning, i.e. from titanium ingots of CP titanium and its various alloys. Then we convert the ingots into the bar, wire, sheet, tube, flanges, valves, forgings and castings. Conversion is done at European producers facilities only.

We can offer you titanium products, nickel based alloy products and some other special stainless steel from the stock. Here is part of our stock list, please check and see whether there are some items which you need.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Dimensions</th>
<th>Weight</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gr.5</td>
<td>1.8<em>1000</em>2000mm</td>
<td>2195kgs/137pcs</td>
<td>ASNA 3200E</td>
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<tr>
<td>Gr.5</td>
<td>1.6<em>914.4</em>2438181kgs/11pcs</td>
<td>MIL-T-9046J/AMS 4911H/ DMS1592F/ASTM B265</td>
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<tr>
<td>Gr.5</td>
<td>1.8<em>914.4</em>2438 692kgs/38pcs</td>
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<td>Gr.5</td>
<td>1.8<em>914.4</em>3048 136kgs/6pcs</td>
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<td>Gr.5</td>
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<td>Gr.5</td>
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<td>Gr.5</td>
<td>6.35<em>914.4</em>3048 241kgs/3pcs</td>
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<td>Gr.5</td>
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<td>Gr.5</td>
<td>0.813<em>914.4</em>3048 460kgs</td>
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<tr>
<td>Gr.5</td>
<td>1.27<em>914.4</em>2438.4 500kgs</td>
<td>MIL-T-9046J/AMS 4911H/ DMS1592F/ASTM B265</td>
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</tr>
<tr>
<td>Gr.5</td>
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<td>MIL-T-9046J/AMS 4911H/ DMS1592F/ASTM B265</td>
<td></td>
</tr>
</tbody>
</table>

LCMA is approved by TUV /Cert DIN EN ISO 9001:2000; PED 97/23/EC; EN 9100 Aerospace series

Dear clients, please welcome to visit LCMA website www.lcma.lu. If you have any inquiries please contact us
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For more information, please visit our website (stocklist) for more information. We can offer our customers a very competitive price and a very fast delivery.

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Tel: 0086-22-82166882-600  Fax: 0086-22-82101337
Email: celia.qi777@gmail.com  http://www.tjht2928.com

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2. The ERP system allows us to provide real time info to customers

3. Delayed-Shipment-Recovery-Fund (DSRF) has been established and used for those late shipments. (ship materials to customers by air instead of by sea at our cost in order to save the delayed time)

4. 2008 Edition ISO9002 certification by DNV

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Thank you for your continued support. Every issue of the TITANIUM Update Newsletter will recognize members that have renewed their investment with the International Titanium Association.

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