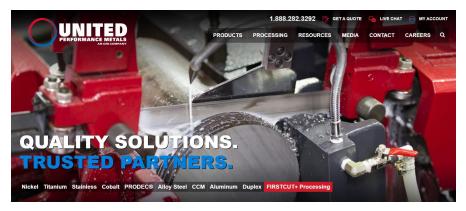
December, 2019



AN ONI COMPANY

The UPM Market Informer

United Performance Metals Launches Redesigned Website. www.upmet.com



United Performance Metals (UPM) launched a new, fully redesigned website this month. The company has extensively updated their site navigation, improved page speed and has enhanced design features for mobile, tablet and desktop users.

As part of the new design structure, the website www.upmet.com, features a full-screen slideshow, key material grades and FIRSTCUT+® Processing Services the company is known for. It also displays both product and industry line cards within the home page as well as the company blog, social media and Live Chat portal.

"Our new website is vibrant and engaging," said Jeff Adams, Marketing Manager. "The new mobile-first design is a great advantage for those customers who prefer to navigate the web on a mobile device and offers customers across the globe a greater user experience."

Positive Start to Dubai Airshow for Airbus

Airbus has enjoyed a positive start to the Dubai Airshow, with two large orders for commercial jetliners from Middle East-based airlines. Wings for these aircraft will be designed and manufactured in the UK.

Dubai-based Emirates signed a purchase agreement for 50 A350-900s; Airbus' new generation widebody aircraft. Air Arabia signed a firm order for 120 Airbus air-

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Contact sales@upmet.com with your inquiries, or visit our website for a complete list of our high-strength, high-performance materials and FIRSTCUT+® Processing Services. Learn more at www.upmet.com



GE Delivers 2,000th GEnx Engine

Just in time for its 15th anniversary, the GEnx engine program celebrated delivery of the 2,000th GEnx engine to Boeing, capping a banner year for the GE Aviation widebody engine.

"This milestone is a tribute to the past 15 years, as well as springboard for future innovation and applications for the GEnx," said Mahendra Nair, general manager for the GEnx program. "From a blank sheet design to incorporating the latest advanced technologies and materials, our customers prefer the GEnx thanks in part to the 15% better fuel efficiency and excellent reliability that results in high utilization rates."

With high-pressure ratio compressor, the GEnx offers fuel efficiency to power many of the longest routes, including Qantas' 787-9 record-breaking non-stop flight from New York to Sydney in October. The flight carried 49 passengers and covered 10,200 miles in 19 hours and 16 minutes.



"Whenever we reach a milestone like assembling the 2,000th GEnx engine, it's an exciting day for our customers and the program," said Jim Leister, GEnx executive program manager.

Launched in April 2002, the GEnx has the highest reliability and utilization, lowest fuel burn and longest range capable of any engine on the Boeing 787 aircraft, providing airlines with more flights per year. More than 1,900 engines are flying today with 60 operators of Boeing's 787 Dreamliners and 747-8 aircraft. *Source: Aerospace Manufacturing and Design, Eric Brothers, Photo GE Aviation*

Aerobotix Reaches 100 Robot Milestone



Madison, Alabama-based robotic integrator Aerobotix has reached an industry milestone, having integrated and installed more than one hundred Fanuc robots. Reaching this goal is a major milestone for a small business in a niche market. The 100 robots across five different countries support programs ranging from the F-35 Lightning and the B-2 Stealth Bomber to Patriot and advanced hypersonic missile programs.

"The use of robots has drastically reduced the time and cost needed to complete these tasks and creates an ergo-

nomically friendly and less hazardous work environment. One of the main goals of Aerobotix is to ensure safer work conditions for our customers," said Keith Pfeifer, the company's engineering manager. Aerobotix designs and integrates turn-key robotic sanding and painting systems and quality robotic inspection tools and methods. These robotic systems are used primarily in aerospace and defense industries. Source: Aerospace Manufacturing and Design, Eric Brothers, *Photo Aerobotix*

Visit the New UPM Website www.upmet.com

Tesla Plans to Invest \$4.4 Billion in Berlin Factory



Tesla Inc plans to invest up to €4 billion (\$4.4 billion) in a new electric car factory near Berlin, German media reported on Sunday. The new "Gigafactory" is due to be built in the town of Grünheide outside the German capital and will be Tesla's first European car and battery plant.

The Brandenburg state government told news agency DPA that at least 3,000 people could be employed at the factory, and that the number could rise up to 8,000 after an expansion. Construction on the massive project is slated to begin in the first three months of 2020, with the plant expected to be up and running by the end of 2021.

In order for construction to begin soon, however, the company needs to quickly submit paperwork to secure the required permits, local public broadcaster RBB reported. Although Tesla is planning on spending billions on its new factory, the US company can expect around €300 million in subsidies from the European Union, according to the *Bild am Sonntag* newspaper.

Tesla boss Elon Musk had announced his company's plans to build the fourth Gigafactory near Berlin earlier this week, adding that Tesla will also set up an engineering and design center in the German capital. The factory is set to build the company's future Model Y compact SUV as well as batteries and engines. *Source: DW.com. Photo Images/VCG*

Volkswagen's \$800 Million Tennessee Factory Expansion to Include Battery Pack Plant

Volkswagen said Wednesday it will build a battery pack assembly facility as part of an \$800 million expansion project that will turn the Chattanooga, Tenn. factory into its North American base for manufacturing electric vehicles. The Chattanooga factory

expansion, which includes a 564,000-square-foot addition to the body shop and is expected to create 1,000 new jobs at the plant, has been in the works for some time now. But the battery pack assembly announcement, while logical, came as a surprise.

"This is a big, big moment for this company," Scott Keogh, president and CEO of Volkswagen Group of America said in a statement. "Expanding local production sets the foundation for our sustainable growth in the U.S. Electric vehicles are the future of mobility and Volkswagen will build them for millions of people."

The automaker's Chattanooga expansion is just a piece of its broader plan to move away from diesel in the wake of the emis-



sions cheating scandal that erupted in 2015. Globally, VW Group plans to commit almost \$50 billion through 2023 toward the development and production of electric vehicles and digital services. The Tennessee factory (along with the other new facilities) will produce electric vehicles using Volkswagen's modular electric toolkit chassis, or MEB, introduced by the company in 2016. The MEB is a flexible modular system — really a matrix of common parts — for producing electric vehicles that VW says makes it more efficient and cost-effective.

The company also built a European facility in Zwickau, Germany. Earlier this month, VW began production of the ID. 3 electric vehicle began at the Zwickau factory. By 2022, VW's MEB vehicles will be produced at eight locations on three continents. EV-production at facilities are expected to come online in Anting and Foshan in China in 2020, and in the German cities of Emden and Hanover by 2022. Volkswagen currently produces the midsize Atlas SUV and the Passat sedan at the Chattanooga factory. Production of its electric vehicles is set to begin in Chattanooga in 2022. The first model will be an SUV of the ID. family. Source: Techcrunch, Photo VW



Alloy Spotlight!

United Performance Metals supplies Nickel Alloy X in sheet, coil, bar, and plate.

- Alloy X Sheet in stock 0.020" - 0.130"
- ◆ Alloy X Plate AMS in stock 0.1875" -2.500"
- Alloy X Bar in stock 0.250" - 6.500"

Nickel Alloy X has outstanding resistance to oxidation and exceptional strength at high temperatures. It resists carburization and nitriding, has good formability, weldability and machinability.

This material is often used in jet engines, chemical processing, gas turbines, industrial furnace and flash driers.

Let UPM be your partner for Alloy X and other nickel alloys.

Contact UPM at 888.282.3292 or email sales@upmet.com.

For more information, visit our website at www.upmet.com.





Surcharge Totals September 2019 - February 2020

| | Sept | Oct | Nov | Dec | Jan | Feb |
|--------------|--------|---------|---------|--------|--------|--------|
| 15-5 | 0.4978 | 0.5231 | 0.5117 | 0.4942 | * | * |
| 15-7 | 0.7899 | 0.8535 | 0.8339 | 0.7395 | * | * |
| 17-4 | 0.4828 | 0.5015 | 0.4897 | 0.4763 | * | * |
| 17-7 | 0.6380 | 0.7106 | 0.7036 | 0.6553 | * | * |
| 201 | 0.4998 | 0.5365 | 0.5250 | 0.4921 | * | * |
| 301 7.0% | 0.6290 | 0.6989 | 0.6918 | 0.6449 | * | * |
| 302/304/304L | 0.6933 | 0.7759 | 0.7699 | 0.7153 | * | * |
| 304-8.5% | 0.7218 | 0.8106 | 0.8052 | 0.7467 | * | * |
| 305 | 0.9245 | 1.0576 | 1.0559 | 0.9703 | * | * |
| 309 | 0.9510 | 1.0839 | 1.0829 | 0.9970 | * | * |
| 310 | 1.3639 | 1.5853 | 1.5918 | 1.4518 | * | * |
| 316/316L | 1.0040 | 1.1117 | 1.0960 | 0.9745 | * | * |
| 316LS/316LVM | 1.4600 | 1.6200 | 1.5100 | 1.3100 | * | * |
| 317L | 1.1818 | 1.3022 | 1.2821 | 1.1269 | * | * |
| 321 | 0.7424 | 0.8377 | 0.8327 | 0.7704 | * | * |
| 347 | 1.0522 | 1.1476 | 1.1426 | 1.0803 | * | * |
| 409/409 Mod | 0.1836 | 0.1655 | 0.1500 | 0.1577 | * | * |
| 410/410S | 0.1895 | 0.1713 | 0.1559 | 0.1636 | * | * |
| 430 | 0.2236 | 0.2050 | 0.1904 | 0.1977 | * | * |
| 434 | 0.3030 | 0.2844 | 0.2655 | 0.2535 | * | * |
| 439 | 0.2309 | 0.2124 | 0.1980 | 0.2052 | * | * |
| 440A | 0.2236 | 0.2050 | 0.1904 | 0.1977 | * | * |
| 2205 | 0.8909 | 0.9384 | 0.9128 | 0.8005 | * | * |
| 263 | 5.2387 | 4.9046 | 4.8125 | 5.7479 | 6.8100 | 6.6353 |
| 276 | 5.2053 | 5.1636 | 5.5403 | 6.2513 | 6.8100 | 6.4227 |
| A286 | 1.3368 | 1.2892 | 1.4758 | 1.7724 | 2.0100 | 1.9110 |
| 330 | 1.6226 | 1.5670 | 1.8453 | 2.2659 | 2.6200 | 2.5054 |
| 400 | 2.8939 | 2.8496 | 3.3721 | 4.0981 | 4.7800 | 4.5835 |
| 455 | 0.8300 | 0.9100 | 0.8600 | 0.7900 | * | * |
| 465 | 1.0400 | 1.1500 | 1.0800 | 0.9500 | * | * |
| 600 | 3.1096 | 3.0577 | 3.6423 | 4.5129 | 5.2800 | 5.0575 |
| 601 | 2.7267 | 2.6601 | 3.1387 | 3.8529 | 4.4700 | 4.2918 |
| 617 | 4.9959 | 4.7931 | 4.9728 | 5.8546 | 6.7400 | 6.4867 |
| 625 | 5.4098 | 5.3503 | 5.7753 | 6.4882 | 7.0900 | 6.8049 |
| 718 | 5.1871 | 5.1290 | 5.5170 | 6.1274 | 6.6500 | 6.4507 |
| X-750 | 3.6859 | 3.6326 | 4.2008 | 5.0473 | 5.7900 | 5.5760 |
| 825 | 2.2649 | 2.2047 | 2.4954 | 2.9598 | 3.3500 | 3.1856 |
| HX | 3.2866 | 3.2225 | 3.5368 | 4.1138 | 4.6000 | 4.3452 |
| 188 | 7.2100 | 8.6600 | 8.4200 | 7.7500 | * | * |
| CCM | 7.4300 | 10.5000 | 10.4300 | 9.7000 | * | * |
| L-605 | 7.9700 | 9.6900 | 9.4600 | 8.8100 | * | * |