

GLOBAL ECONOMY



Solar arrays to provide power to space station

The next time the Jules Verne Automated Transfer Vehicle (ATV) four solar arrays are fully deployed, giving the vehicle a total span of 22.3 m, will be in early 2008, says the European Space Agency. It will travel at a speed of 17,400 mph over the South Pacific Ocean. Silicon-based solar cells, developed and produced in Germany by RWE Space Solar Power, cover the four panels per array with a total surface of 33.6m² (4 x 8.4 m), and are able to generate an average of 4800 watts.

The automatic deployment of these metallic blue "wings," and the activation of the on-board navigation systems, will transform the 20-metric-ton ATV into a fully automatic spaceship navigating towards the International Space Station.

Mounted on the ATV service module, the four sun-tracking arrays are totally independent and can get the best orientation to the sun. The ATV solar power sources are built to tolerate the loss of one of the four independent arrays and their respective power chains.

For more information: Markus Bauer, European Space Agency, tel: 31 71 565 6799; markus.bauer@esa.int; <http://www.alphagalileo.org/index.cfm?fuseaction=readrelease&releaseid=525537>.



ArcelorMittal to build greenfield bar steel complex in Russia

ArcelorMittal has signed an agreement with the administration of the Tver region in Russia that will lead to the creation of a greenfield long-carbon-steel production unit. The objective of the agreement is to make available to ArcelorMittal the land required to build a steel complex consisting of an electric arc furnace with a capacity of one million tons of steel, and two bar mills.

This steel complex will be built in two phases. In the first phase, a bar mill with a capacity of 600,000 tons of rebars and merchant bars will be built. Work on the site will start during Q2 2008 and commissioning of the mill is scheduled for the beginning of 2010. www.arcelormittal.com

Natural gas and iron ore to be mined, processed in the Arctic

Some of the world's largest reserves of natural gas, which have been estimated to comprise around 25% of total global undiscovered reserves, are located in Norwegian and Russian territory in the Barents Sea, reports Sintef Materials and Chemistry of Norway. Huge deposits of iron ore, nickel, and chromium are also said to be in the same geographic region.

Sintef has initiated a project to set up sponge iron plants that would be operated in conjunction with a gas-fired power station – with a flue-gas scrubber to reduce CO₂ emissions to zero. The power station would be run on the gas byproducts from iron production, such as hydrogen, where natural gas would replace coal or coke as fuel.

Engineers believe that an industrial cluster

Volvo Aero acquires composite company to cut engine weight

Volvo Aero has acquired the composite company Applied Composites AB (ACAB) to develop and manufacture aircraft engine components of composite materials, which are significantly lighter than the comparable metal parts. Volvo Aero will invest approximately \$8 million in research and development within the area of composites during the next 18 months.

The goal is to establish a new operation that will develop and manufacture certain selected aircraft engine components of composite materials. These components will then significantly reduce fuel consumption and carbon dioxide emissions. www.volvo.com/volvoaero

BRIEFS

A.M. Castle & Co. has acquired the outstanding capital stock of **Metals UK Group**, a distributor and processor of specialty metals primarily serving the oil and gas, aerospace, petrochemical, and power generation markets worldwide. www.amcastle.com

ArcelorMittal has entered into a definitive agreement to acquire **Unicon**, the leading manufacturer of welded steel pipes in Venezuela. The purchase forms part of ArcelorMittal's strategy to strengthen its welded steel pipes business in South America. www.arcelormittal.com

Calcarb Ltd. announces that construction of the new Calcarb global headquarters and expanded manufacturing plant is well underway and on schedule for completion by mid 2008. Calcarb Ltd. is a Scotland-based manufacturer and international supplier of premium high purity carbon-bonded, carbon-fiber based rigid insulation and precursor materials. www.calcarb.com

China Direct Inc., a U.S. company that owns controlling stakes in a diversified portfolio of Chinese entities and assists Chinese businesses in accessing the U.S. capital markets, has entered into two letters of intent to create two new foreign invested entities in China. Based in Inner Mongolia, they will manufacture and distribute magnesium. www.cdii.net

Corning Inc. announces that its board of directors has approved a five-year capital expenditure plan of \$795 million to co-locate a glass manufacturing facility at Sharp Corp.'s plant in Sakai City, Japan. Glass substrate production from the new facility is expected to meet Sharp's plan to begin mass production of LCD panels for large televisions by March 2010. www.corning.com

Nucor Corp. has signed a Memorandum of Understanding with the **Duferco Group**, Switzerland, to establish a 50/50 joint venture for the production of steel beams in Italy and the distribution of beams in Europe and North Africa. www.nucor.com

Pulsar Ltd. announces the first sale of its magnetic pulse welding system in Korea. Provided in the framework of the Pulsar Research and Education Program (PREP), the sale to Korea's prestigious **Research Institute of Industrial Science and Technology (RIST)** is both a commercial and technological milestone for the company. www.pulsar.co.il

Sabic Innovative Plastics has opened its Centre for Manufacturing Innovation in Cobourg, Ontario. The CMI, which was funded with \$700,000 matching funds from the Province of Ontario, will work with area universities and colleges to expand plastics manufacturing knowledge and expertise. www.sabic-ip.com

The **Siemens Division Industrial Solutions** has acquired **Morgan Construction Co.**, Worcester, Mass., a designer and producer of high-quality rolling-mill products and services for the metals industry worldwide. www.siemens.com

of this sort would provide highly efficient iron and steel production, together with efficient CO₂ capture. Such a cluster could also be expanded to include other products and materials such as hydrogen, carbon black, bioproteins, polymers, silicon, aluminum, and titanium.

For more information: Jack Ødegaard, Sintef Materials and Chemistry, Norway; tel: 47 93059461; jack.odegaard@sintef.no; www.sintef.no.

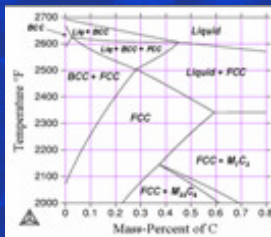
Canadian government awards \$36 million to Nanotech Institute

The government of Canada has reaffirmed its support for R&D-based partnerships between all levels of government, the private sector, and university researchers by investing \$118 million over three years in six National Research Council (NRC) technology cluster initiatives. As part of this announcement, the NRC National Institute for Nanotechnology (NINT) will receive \$36 million over the next three years.



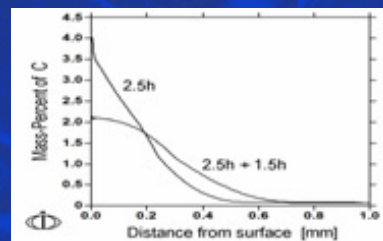
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The investment supports the following priority areas: hydrogen and fuel cell technologies in Vancouver, nanotechnology in Edmonton, plants for health and wellness in Saskatoon, biomedical technologies in Winnipeg, photonics in Ottawa, and aluminum transformation in the Saguenay-Lac-Saint-Jean region.

Technology clusters are broadly based community partnerships between industry, academia, and all levels of government, focused on building a competitive advantage for Canada through research and innovation. <http://nint-innt.nrc-cnrc.gc.ca>

French nanotechnology boosted by U.S., Japanese investment

More companies from the United States and Japan are investing and launching partnerships in France to take advantage of its nanotechnology expertise, says the French Technology Press Bureau in London. France has several high-tech clusters dedicated to advancing excellence in nano-technology, including the SCS cluster in Sophia Antipolis, the Systematic cluster in the Paris region, and the Minalogic micro-nanotechnology competitiveness cluster in Grenoble.

This year, Minalogic is strengthening its leader status by investing \$116 million in eight new collaborative projects focused on micro- and nanotechnologies for next-generation semiconductors and new manufacturing processes. Minalogic has recently welcomed Hewlett-Packard as its 50th partner. Starting in September 2007, HP will help cluster members save valuable amounts of time and money with access to highly advanced 2-TeraFlop data processors called Virtual Nodes.

On the R&D side, CEA-Leti (a nanotech laboratory) and Japanese lithography company Nikon have announced that they are joining forces to research Double Patterning and Double Exposure technology for 32 nm semiconductor devices.

For more information: Kate Ambler, French Technology Press Bureau, London, England; tel: 020-7235-5330; kambler.ftpb@ubifrance.fr; www.ftpb.co.uk.

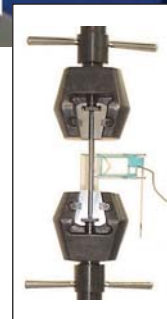
Kobe Steel has inaugurated a new \$47 million titanium melt shop at its Takasago Works in Hyogo Prefecture in western Japan. The melt shop operates the company's proprietary Kobe Method (a vacuum arc remelting method), which makes possible the use of titanium scrap. The new melt shop is located adjacent to the current melt shop to stabilize production and improve the operational efficiency of both shops. www.kobelco.co.jp



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