

What's New in the World of Superconductivity (January)

Power

American Superconductor Corporation (January 5, 2004)

American Superconductor Corporation (AMSC) announced that its HTS ship propulsion motors have been selected by the editors of IEEE Spectrum, a prestigious and influential technology publication, as one of the six products or projects worldwide with the potential to "transform major industries". AMSC's HTS ship propulsion motors were chosen as the winner in the transportation category, one of six industries considered by the magazine's editors. The magazine reported that HTS motors are "returning ship propulsion to the absolute forefront of advanced technology."

Source:

"IEEE Spectrum Selects American Superconductor's Ship Propulsion Motors As A Winning Product for 2004"

American Superconductor Corporation press release (January 5, 2004)

<http://www.amsuper.com/html/newsEvents/news/10335061601741.html>

American Superconductor Corporation (January 8, 2004)

American Superconductor Corporation and General Electric announced that American Transmission Company (ATC) has purchased six D-SMES systems that are presently being used for voltage stabilization in the Rhinelander Loop transmission grid, previously owned by Wisconsin Public Service (a subsidiary of WPS Resources Corporation). Wisconsin Public Service had transferred the transmission grid ownership and operations to ATC in 2001 but had retained certain assets, including the six D-SMES units that have now been acquired by ATC. As a result of this transaction, American Superconductor recognized an additional US \$3.2 million in revenue for the quarter ending December 31, 2003. During the 3 1/2-year history of their operation, the six D-SMES systems have protected the Rhinelander loop from more than 2000 distribution or transmission voltage sags, including several acute electrical faults.

Source:

"American Transmission Company Purchases From American Superconductor Six D-SMES Transmission Grid Reliability Systems Previously Owned By Wisconsin Public Service"

American Superconductor Corporation press release (January 8, 2004)

<http://www.amsuper.com/html/newsEvents/news/10335061601742.html>

American Superconductor Corporation (January 14, 2004)

American Superconductor Corporation will provide a D-VAR[®] reactive power compensation system to Canada's largest wind farm developer, Vision Quest Windelectric (a division of TransAlta Corporation). The D-VAR system will provide reactive power support and voltage regulation at the Summerview wind farm, located south of Calgary, Alberta. The D-VAR system will enable the wind farm to meet the voltage control standards required for its interconnection with the regional power grid. Once completed, the Summerview project will

cover approximately 7,000 acres and generate about 130 MW of electric power.

Source:

“American Superconductor’s D-VAR® System To Ensure Transmission Interconnection For Canadian Wind Farm”

American Superconductor Corporation press release (January 14, 2004)

<http://www.amsuper.com/html/newsEvents/news/10335061601743.html>

American Superconductor Corporation (January 26, 2004)

American Superconductor Corporation (AMSC) has filed a patent application for a nanotechnology-based manufacturing technique that will deliver an immediate 30% increase in the electric current-carrying capability of the company’s second-generation (2G) HTS wire. The new nanotechnology process involves the production of disperse “nanodots” throughout the superconductor coating of the 2G HTS wire. Based on laboratory-scale work performed by research colleagues at the Air Force Research Laboratory and the Los Alamos National Laboratory, optimizing the size, dispersion, and composition of the nanodots should enable the electrical current flow in 2G wire to be at least doubled at the operating temperatures and magnetic fields associated with commercial superconductor applications. The nanodots will be incorporated in 10-m lengths of 2G HTS wire that are presently being sold to customers around the world, and nanotechnology capabilities will be included in the 2G pilot manufacturing plant that AMSC plans to begin building at the end of this year. AMSC’s 2G HTS wire is being designed as a form-fit-function replacement for the company’s existing first-generation wire, but will have a manufacturing cost that is 2 – 5 times lower than the first-generation wire. This reduction in cost is expected to expand the market for HTS applications.

Source:

“American Superconductor’s Nanotechnology Breakthrough Significantly Increases Performance of Superconductor Wire”

American Superconductor Corporation press release (January 26, 2004)

<http://www.amsuper.com/html/newsEvents/news/10335061601745.html>

Intermagnetics General Corporation (January 28, 2004)

Intermagnetics General Corporation has announced the forecasted performances of its traditional core businesses and the projected contribution of its recent acquisition of Invivo Corporation (effective as of January 27) for fiscal 2005, ending in May 2005. Overall, revenue is expected to increase by more than 50% to approximately US \$250 million in fiscal 2005. Regarding the acquisition of Invivo Corporation, Glenn H. Epstien, chairman and CEO of Intermagnetics, commented “This is a highly attractive strategic acquisition with significant benefits for Intermagnetics. For what historically has been the core business of Intermagnetics, it means access to new markets and customers as well as the services of a highly skilled and respected global sales team.” The company’s MRI sector is expected to show attractive growth in the last three quarters of the year, partly in response to the planned introduction of new products. The instrumentation sector may experience a moderate slowdown in the third quarter, compared with previous record performances, but strong order trends suggest that growth will be resumed in the fourth quarter. Regarding the company’s energy technology sector, SuperPower is expected to achieve a steep increase in revenue, mainly from the

commencement of payments for progress on major projects. However, federal funding for energy projects has been reduced dramatically because of the lack of consensus in Congress on the US National Energy Policy. These major cutbacks will affect the entire industry, including SuperPower, and are unlikely to be rectified within the present federal fiscal year, ending September 2004. Consequently, Intermagnetics expects to increase fourth-quarter funding for SuperPower by approximately US \$ 1 million over its initially planned figure.

Source:

“Intermagnetics Comments on Contribution of Invivo Acquisition, Provides Update on Core Business Operations”

Intermagnetics General Corporation press release (January 28, 2004)

<http://ir.thomsonfn.com/InvestorRelations/PubNewsStory.aspx?partner=10215&storyId=104696>

Communication

Superconductor Technologies Inc. (January 9, 2004)

Superconductor Technologies Inc. (STI) has filed a shelf registration statement (Form S-3) with the Securities and Exchange Commission which, upon being declared effective by the SEC, will enable the sale of up to US \$ 80 million in common stock. STI has not made any decision regarding the timing, amount, or type of any public offering that may be made. M. Peter Thomas, President and CEO of STI, commented “We have concluded that the filing of a shelf registration statement would increase our flexibility and reduce the regulatory costs (in time and money) if we should conclude that STI would benefit from increased funding. STI has been growing rapidly. We want to make sure we have access to any financing we may need to fund continued growth. This would include funds for manufacturing expansion, working capital requirements, new product or market development, and/or acquisitions. However, we have not made any definitive plans for any offering, nor have we begun any process to select any underwriters to conduct such an offering.”

Source:

“Superconductor Technologies Announces Filing of Shelf Registration Statement”

Superconductor Technologies Inc. press release (January 9, 2004)

<http://ir.thomsonfn.com/InvestorRelations/PubNewsStory.aspx?partner=5951&storyId=101025>

Accelerator

Istituto Nazionale di Fisica Nucleare (January 20, 2004)

The first of five solenoids that will constitute the compact muon solenoid (CMS) superconducting magnet component of the Large Hadron Collider (LHC) was shipped on January 21 from a Genova port to CERN, the site of the accelerator’s construction. Researchers hope that the CMS experiment will provide information on the elusive Higgs boson, an elementary particle that has been predicted but not yet directly observed. The CMS experiment will analyze the products of the collisions of proton beams directed by the LHC,

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reconstructing their tracks and measuring their energy. The CMS magnet, which is the central component of the CMS experiment, will generate the very high magnetic field required to recognize the particles produced by the collisions. The CMS magnet is being produced by an international partnering of research centers: the Italian National Institute for Physics (INFN), CERN, the Commissariat pour l'Energie Atomique (CEA), the Polytechnic of Zurich (ETH-Z), and Ansaldo Superconductors.

Source:

"The first module of CMS superconducting magnet is leaving towards CERN"

Istituto Nazionale di Fisica Nucleare press release (January 20, 2004)

<http://www.infn.it/>

(Akihiko Tsutai, Director, International Affairs Department, ISTEC)

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