

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

Power

American Superconductor Corporation (July 1, 2003)

American Superconductor Corporation has signed non-binding letters of interest with three groups of investors for US \$ 50 million in financing. The financing is expected to consist of a five-year loan of up to \$30 million, which will be provided by a corporate finance company and several institutional investors. Three institutional investors have also signed a non-binding letter of intent to provide \$ 10 million in subordinated notes that can be converted into common stock. American Superconductor has also signed a non-binding letter of intent with a commercial bank that will provide up to \$10 million in working capital credit. The proceeds of this combined financing will be used for working capital, general corporate purposes, and the scale-up of American Superconductor's second generation HTS wire pilot manufacturing facility.

Source:

"American Superconductor Announces \$50 Million Financing Plan"

American Superconductor Corporation press release (July 1, 2003)

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

American Superconductor Corporation (July 9, 2003)

American Superconductor Corporation (AMSC) and Sumitomo Electric Industries Ltd. (SEI) have agreed to license their North American and European patents for first-generation HTS wires, electromagnetic coils, electromagnets and current lead devices to one another. Together, the two companies hold a substantial number of HTS patents worldwide. The companies have also signed separate letters of intent to advance the superconductor cable market by leveraging their complementary capabilities; in particular, SEI will seek to market power cables that utilize AMSC's HTS wire. Under the terms of the licensing agreement, one company will pay royalties to the other company whenever it sells a product that utilizes the second company's patents. Further details of the agreement were not released. Commented Greg Yurek, chief executive officer of AMSC, "Our agreement and letter of intent with SEI will help accelerate market adoption of HTS technology in several ways. First, they establish a path for the industry's frontrunners to develop new business relationships. Second, the agreement specifically ensures that customers for AMSC's wire can fabricate coils, magnets and current leads without further licensing from SEI. And, third, the letter of intent enables our two companies to cooperate on superconductor power cable opportunities in North America, a market that is widely expected to see rapid growth and early adoption of HTS products and technologies."

Source:

"American Superconductor Announces Licensing and Market Development Accords with Sumitomo Electric"

American Superconductor Corporation press release (July 9, 2003)

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

American Superconductor Corporation (July 14, 2003)

American Superconductor Corporation (AMSC) will ship 30 km of HTS wire to China for use in two electric power projects. China, with the second largest power generation capacity in the world, is seen as one of the world's most important markets for HTS products. AMSC has sold wire samples and worked with a number of companies and government agencies in China and views this initial order as the beginning of what could be an enormous growth potential for their products in China. The two projects consist of a power cable project in Lanzhou province (which will utilize 12 km of AMSC'S HTS wire) and a fault current limiter project in Changsha City (which will utilize 18 km). AMSC expects to deliver all of the wire within the present fiscal year.

Source:

"American Superconductor to Ship 18 Miles of High Temperature Superconductor Wire to China for Electric Power Projects"

American Superconductor Corporation press release (July 14, 2003)

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

Intermagnetics General Corporation (July 14, 2003)

Intermagnetics General Corporation announced that the U.S. Department of Energy (DOE) would contribute US \$13 million toward the \$26 million cost of a project to demonstrate the technical and commercial viability of high-temperature superconductors in an in-grid electric utility setting. Part of the DOE's Superconductivity Partnership Initiative program, the project will be led by Intermagnetics' subsidiary, SuperPower Inc. The New York State Energy Research and Development Authority (NYSERDA) has also committed an additional \$ 8 million to the project. Intermagnetics and Sumitomo Electric Industries, Ltd. will equally share the remaining \$7 million of the project's cost. The 350-meter superconducting cable will be installed in the Albany, N.Y. power distribution grid operated by Niagara Mohawk. Southern California Edison will also participate in the project as an advisor.

Source:

"INTERMAGNETICS ANNOUNCES U.S. DEPARTMENT OF ENERGY FUNDING OF \$13 MILLION TOWARD HTS CABLE PROJECT IN ALBANY, NEW YORK"

Intermagnetics General Corporation press release (July 14, 2003)

http://www.igc.com/news_events/news_events.asp

European Advanced Superconductors GmbH & Co. KG (July 16, 2003)

As of July 1, European Advanced Superconductors GmbH & Co. KG (EAS) was established as a subsidiary of Bruker BioSpin GmbH, Karlsruhe, acquiring the superconductor activities of Vacuumschmelze GmbH & Co. KG, Hanau. EAS is the largest superconductor producer in Europe and a leading producer worldwide, with approximately 190 employees. The company is involved in the development and production of a complete range of low- and high-temperature superconductors at their facility in Hanau. Most of its products are presently used for the fabrication of MRI medical magnets, but the demand for analytical magnetic resonance (i.e. NMR and EPR) is expected to grow in the future. The company is also involved in international projects for the physics community, like the Large-Hadron-Collider and the International Thermonuclear Experimental Reactor program.

Source:

"EAS acquired the superconductor activities"

Vacuumschmelze press release (July 16, 2003)

[http://www.vacuumschmelze.de/home_vac_en.nsf/\\$frameset/start](http://www.vacuumschmelze.de/home_vac_en.nsf/$frameset/start)

Nexans (July 17, 2003)

Nexans has signed a contract with the Délégation Générale pour l'Armement (DGA) for the supply of a 500,000 J SMES system. The system's superconducting coil will be manufactured using superconducting tape produced by Nexans at its Jeumont (France) facility. A cryogenic refrigerator will be utilized to attain the operating temperature of -250°C . The coil and its cryogenic refrigerator will be designed in collaboration with the Centre de Recherche sur les Très Basses Températures (CRTBT) and the French National Scientific Research Center (CNRS). The system should become operational in 2006.

Source:

"Superconductivity: Nexans signs a contract with the DGA"

Nexans press release (July 17, 2003)

http://www.nexans.com/dyn/site.php3?page_id=18

Intermagnetics General Corporation (July 17, 2003)

Intermagnetics General Corporation (IGC) reported that their fourth-quarter earnings increased by about 27% to US \$ 4.4 million, compared to \$3.4 million for the corresponding period in the previous year. Net sales for the quarter amounted to \$ 37.7 million, compared to \$37 million for the corresponding period in the previous year. Their reported net income for the year was \$14.9 million, including one-time charges associated with the sale of securities that was partially offset by a favorable settlement in a long-standing trade litigation. The reported net income for the year ending May 26, 2002, was \$20.6 million, including gains from the divestiture of IGC's LTS wire and helium gas businesses partially offset by charges related to the restructuring of the Instrumentation segment and the write-down of investments. Net sales for fiscal 2003 amounted to \$147.4 million, compared with \$144.3 million from ongoing operations in the previous year. Commented Glenn H. Epstein, "Our operating profit increased nearly 20 percent to a record \$23.4 million from \$19.6 million in fiscal 2002. That substantial performance, despite a modest increase in our revenue on an ongoing basis, was possible largely because of our success in further refining our cost structure, concentrating on holding down spending while improving overall efficiency." The MRI segment reported an increase in revenue from \$120.7 million in fiscal 2002 to \$125.1 million in fiscal 2003 (the divested LTS wire business contributed about \$2.1 million to the fiscal 2002 revenue). Regarding the company's outlook, Epstein stated, "During fiscal 2004, we anticipate continued increases in sales of our recently introduced, powerful 3.0 Tesla superconducting MRI magnets. Beginning around fiscal 2005, we expect to move into commercial delivery levels for our new high-field 1.0T open magnets, depending on product introduction decisions made by the MR system producers with which we have relationships."

Source:

"INTERMAGNETICS REPORTS Q4 NET INCOME UP 27% TO \$4.4 MILLION"

Intermagnetics General Corporation press release (July 17, 2003)

http://www.igc.com/news_events/news_events.asp

General Electrics (July 23, 2003)

General Electrics (GE) has successfully tested a demonstration model for a new HTS generator. The development program is expected to lead to a higher generator efficiency capable of providing

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millions of dollars in energy savings. The generator is the result of a US \$12.3 million contract from the U.S. Department of Energy for a 3.5-year program to advance HTS generator technology towards commercialization. The program began in October 2002. The presently reported demonstration model represents a 1.8 MVA proof-of-concept model for the rotor plus the necessary cryo-refrigeration and HTS subsystems. The results of these tests will next be scaled to a 100-MVA prototype generator that will be tested under a full load. The present refrigeration system and transfer coupling are full-size prototypes that will be directly applicable to the 100-MVA generator. The 100-MVA prototype is scheduled for completion in 2004, with testing in 2005.

Source:

"High-efficiency generator design validated"

General Electrics press release (July 23, 2003)

http://www.gepower.com/dhtml/corporate/en_us/aboutgeps/new_pre_rea.jsp

SuperPower, Inc. (July 23, 2003)

SuperPower announced that it has progressed on its goal to produce 10-m lengths of coated conductors with a rating of 1000 A-m on a reproducible basis. The announcement was made at the U.S. Department of Energy Peer Review Meeting (Washington, July 23-25, 2003). Included in the demonstration was an 18-m long tape with a performance of 1980 A-m. Significantly, the high performance 10-m lengths of tape were produced using a higher tape throughput than that used in previously released results. SuperPower also announced the successful completion of a milestone in its Cooperative Research and Development Agreement (CRADA) with the Los Alamos National Laboratory. The results of this collaboration include the establishment of a pilot-scale manufacturing facility for coated conductors with the recently demonstrated specifications. SuperPower and Los Alamos will continue their CRADA for an additional two years, during which time they will focus on establishing the processes required to achieve a production-scale throughput of second-generation HTS conductors.

Source:

"SuperPower, Inc. Announces Coated Conductor Performance Achievements And Follow-On Cooperative Research And Development Agreement With Los Alamos National Laboratory"

SuperPower, Inc. press release (July 23, 2003)

http://www.igc.com/news_events/news_events.asp

American Superconductor Corporation (July 24, 2003)

American Superconductor Corporation (AMSC) has announced that its second-generation HTS wire exceeded performance expectations by more than 50% in recent cable tests conducted at the Oak Ridge National Laboratory(ORNL). The announcement was made at the U.S. Department of Energy Superconductivity Peer Review Meeting. The cable used in the ORNL tests was fabricated by Ultera, a joint venture between Southwire Company and nkt Cables, in collaboration with ORNL. The tests confirmed the 1.25-meter device as the world's first second-generation power cable conductor to achieve a commercial performance level (an AC current of more than 2,000 Amps). The cable conductor, which was cooled with liquid nitrogen, was capable of carrying up to 2,500 Amps of AC current, far exceeding the original test target of 1,600 Amps. In DC mode, the cable conductor was tested at up to 4,200 Amps. Additional tests to evaluate other cable conductor characteristics are now being performed at ORNL.

Source:

"Second Generation Superconductor Power Cable Conductor Using American Superconductor Wire Achieves Commercial Electrical Performance"

American Superconductor Corporation press release (July 24, 2003)

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

Materials

Superconductive Components, Inc. (July 1, 2003)

On June 30, 2003, Superconductive Components, Inc. completed two private financing transactions in which convertible promissory notes for US \$600,000 were issued and the company's entire \$129,770 obligation to its Series A redeemable convertible preferred stock was redeemed. Four present shareholders in the company have invested the \$600,000 of new money. The owners of the preferred stock agreed to the redemption in exchange for convertible promissory notes of an aggregate amount of \$129,770. The principle and interest of the \$729,770 in new convertible promissory notes are payable June 30, 2006. The notes are secured by liens on the company's assets. Superconductive Components has used \$100,000 of the note proceeds to pay off its bank line of credit and expects to use approximately \$300,000 to finance a move to a newly leased facility and \$200,000 for general corporate purposes.

Source:

"Superconductive Components, Inc. Announces Completion Of Financings"

Superconductive Components, Inc. press release (July 1, 2003)

<http://www.sciengineeredmaterials.com/ne/news/index.htm>

Superconductive Components, Inc. (July 11, 2003)

Superconductive Components, Inc. has received an interim contract from the U.S. Department of Energy for the Phase II Small Business Innovation Research (SBIR) Program to investigate the feasibility of producing cost-effective, kilometer-length BSCCO 2212 wires for high-field magnets. Specifically, the program will examine how to tailor the particle size distribution of BSCCO 2212 powders to improve the advanced thermo-mechanical processing of superconductor/silver composite wires and scale the process to the commercial level. The interim contract is valued at US \$105,000; the complete Phase II SBIR program will be determined by the end of September 2003 and is valued at \$600,000.

Source:

"Superconductive Components, Inc. Announces Contract From U.S. Department of Energy"

Superconductive Components, Inc. press release (July 11, 2003)

<http://www.sciengineeredmaterials.com/ne/news/index.htm>

Communication

Superconductor Technologies Inc. (July 31, 2003)

Superconductor Technologies Inc. (STI) announced that the company's inclusion in Deloitte &

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Touche's prestigious Los Angeles Technology Fast 50 program for the second year in a row. The Technology Fast 50 program ranks the fifty fastest growing technology companies with headquarters in the U.S. The rankings are based on the percentage of growth in fiscal year revenue from 1988-2002. Over this period, STI's revenues increased by 180%. In 2002, their revenue increased by more than 80%, compared to that for 2001. M. Peter Thomas, STI's president and chief executive officer, stated that the company expects to double their revenues in 2003 and explained, "Much of this success can be attributed to SuperLink Rx, which now provides interference protection and higher sensitivity to nearly 3,000 base stations worldwide. This means that millions of potential dropped and blocked calls are being saved every year."

Source:

"Superconductor Technologies Inc. Again Named One of LA's Fastest Growing Tech Companies in Deloitte & Touche 'Technology Fast 50' Program"

Superconductor Technologies Inc. press release (July 31, 2003)

<http://ir.thomsonfn.com/InvestorRelations/PubNews.aspx?product=MzgwU1ZJPVakWQEQUALSTOEQUALSTO&partner=Mzg0TIRrMU1RPT1QJFkEQUALSTO>

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

[Top of Superconductivity Web21](#)