

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

General

Battelle (March 9, 2005)

US President George W. Bush toured Battelle, observing demonstrations of a number of technologies with energy-related applications that are being developed by Battelle and the five Department of Energy national laboratories that Battelle manages or co-manages. Included in the tour was a presentation on grid reliability that focused on the ability of HTS cables to handle much larger electrical loads than existing power lines. Monitoring and control technologies to enable grid operators to detect problems and reduce loads without affecting end-users were also highlighted in the presentation. Most of Battelle's research in this area is being conducted at the Pacific Northwest and Oak Ridge National Laboratories.

Source:

"PRESIDENT GEORGE W. BUSH VIEWS ENERGY INNOVATIONS DURING VISIT TO BATTELLE"

Battelle press release (March 9, 2005)

<http://www.battelle.org/news/05/03-09-05VIPVisit.stm>

Power

Trithor (March 9, 2005)

Trithor has announced that Oswald Elektromotoren GmbH has received a complete set of Trithor's HTS coils (40 pancake coils) for use in a novel tube drawing device introduced under the brand name of LIMODRAW™. The LIMODRAW technology allows contactless forces to be applied in both pulling and pushing directions, enabling increased deformation rates. Productivity is also increased because of the faster line speed. Oswald Elektromotoren is developing the drawing device for Bültmann GmbH, a world leader in the manufacturing of production equipment for semi-finished products. Bernhard Oswald, Managing Director of Oswald Elektromotoren GmbH commented, "As a technology leader in linear electromagnetic motion, we are specifically thrilled to turn Trithor's high-quality coil products into a complete motion device for integration into Bültmann's metal-forming equipment. This is the first time HTS is used to create AC fields in the stator of a motion device". The development program is being funded by a two-year contract from the European Commission.

Source:

"Trithor's Products Applied to Industrial Metal Forming Technology"

Trithor press release (March 9, 2005)

http://www.trithor.de/pdf/2005-03TrithorLimodraw_ENG.pdf

American Superconductor Corporation (March 10, 2005)

American Superconductor Corporation (AMSC) has exercised their underwriters' over-allotment option in connection with their recent public offering and completed the sale of

an additional 600,000 shares of common stock. The net proceeds from the over-allotment option totaled approximately US \$5.9 million; after deducting the underwriting discounts and commissions, AMSC will receive approximately \$45.5 million. The proceeds will be primarily used for working capital and general corporate purposes, including capital expenditures for the scale-up of 2G HTS wire manufacturing.

Source:

“American Superconductor Announces Exercise of Over-Allotment Option for Public Offering”

American Superconductor Corporation press release (March 10, 2005)

http://phx.corporate-ir.net/phoenix.zhtml?c=86422&p=irol-newsArticle_Print&ID=683945&highlight

American Superconductor Corporation, Quantum Design, and HTS-110 Ltd. (March 16, 2005)

American Superconductor Corporation (AMSC), Quantum Design, and HTS-110 Ltd. have announced the introduction of a new product for measuring the fundamental physical properties of materials. This instrument represents a new member of Quantum Design's Physical Property Measurement Systems® (PPMS), which enable the automated characterization of the thermal, magnetic, and electrical properties of advanced materials. The new instrument, known as the PPMS NitroLab, features a 1-Tesla HTS electromagnetic coil produced by HTS-110 Ltd. using AMSC's HTS wire; the instrument is cooled by liquid nitrogen to increase the product's versatility and lower its operating costs relative to similar systems that utilize copper or LTS wire. Quantum Design expects the first sales of this product to occur within the next nine months.

Source:

“Quantum Design Introduces New High Temperature Superconductor-Based Product for Physical Property Measurements”

American Superconductor Corporation press release (March 16, 2005)

http://phx.corporate-ir.net/phoenix.zhtml?c=86422&p=irol-newsArticle_Print&ID=686044&highlight

Intermagnetics General Corporation (March 16, 2005)

Intermagnetics General Corporation has announced its financial results for the third quarter ending February 27, 2005. Net income increased by 55% to US \$8 million (excluding income from the sale of a division, acquisition- and integration-related expenses and certain non-cash items), compared with a normalized net income of \$5.2 million for same quarter in the previous fiscal year. The reported net income for the third quarter was \$24.7 million, while third-quarter net sales amounted to \$75.1 million, compared with \$43.1 million for the same quarter in the previous year. Glenn H. Epstein, chairman and chief executive officer of Intermagnetics, commented, "Our balance sheet ... improved substantially as a result of strong cash flow which, coupled with the proceeds from the sale of Polycold, enabled us to pay down the entire 'revolving' portion of our existing \$130 million credit facility, leaving about \$21 million in long-term debt... Our financings related to the 2004 acquisitions of Invivo and MRI Devices totaled around \$112 million, so in a little more than a year we have reduced that debt by more than 80%. Our interest expense will now be dramatically reduced, and we are extremely well positioned to pursue a range of strategic initiatives to augment the future growth prospects of Intermagnetics."

The third-quarter revenue of SuperPower Inc., a subsidiary of Intermagnetics, totaled \$3.6

million, compared with \$1.5 million for the previous year. Intermagnetics decreased their investment in SuperPower's developmental operations to \$1.3 million from \$1.7 million for the same quarter in the previous years because of accelerated revenue from third-party sources. SuperPower also recorded new orders for ongoing development programs that are expected to support project activities through to FY2006. SuperPower also has started delivering 2G HTS wire to multiple third-party customers in preparation for the start of its commercial operation in 2006.

Source:

"Intermagnetics Reports Strong Q3 Net Income"

Intermagnetics General Corporation press release (March 16, 2005)

<http://phx.corporate-ir.net/phoenix.zhtml?c=88261&p=irol-newsArticle&ID=686495&highlight>

Communication

Superconductor Technologies Inc. (March 10, 2005)

Superconductor Technologies Inc. has announced their financial results for the fourth quarter ending December 31, 2004. Total net revenues fell by 76% to US \$3.9 million, compared with \$16.4 for the same quarter in the previous fiscal year. Net commercial product revenues also fell by 77% to \$3 million, compared with \$12.9 million for the same quarter in the previous fiscal year. Government and other contract revenues also decreased to \$950,000, compared with \$3.4 million for the same quarter in the previous fiscal year. The net loss for the quarter was \$11.3 million, including restructuring and impairment charges of \$1.9 million as well as increased inventory obsolescence reserves of \$4.2 million. M. Peter Thomas, STI's president and chief executive officer, commented, "As previously announced, our lower than expected fourth quarter revenues reflected delays in receiving a few large government and commercial purchase orders, which the company now expects to receive in 2005. On the other hand, we secured a follow-on purchase contract from one of our major customers in December, which calls for minimum shipments in 2005 of about \$7.25 million. Furthermore, our immediately shippable backlog at the end of 2004 was \$730,000, as compared with \$250,000 at the end of 2003."

The company's total net revenues for 2004 were \$23 million, a 53% decrease from the \$49.4 million reported for 2003. Net commercial product revenue fell 56% to \$16.8 million in 2004, from \$38.6 million in 2003. Government and other contract revenues amounted to \$6.2 million in 2004, compared with \$10.8 million in 2003.

Source:

"Superconductor Technologies Inc. Announces Fourth Quarter and Year-End 2004 Results"

Superconductor Technologies Inc. press release (March 10, 2005)

<http://phx.corporate-ir.net/staging/phoenix.zhtml?c=70847&p=irol-newsArticle&ID=684158&highlight>

Accelerator

Italian Institute of Nuclear Physics (March 1, 2005)

The Italian Institute of Nuclear Physics has announced the completion of the largest superconducting solenoid in the world, capable of generating a magnetic field of 4 Tesla. The solenoid, which is composed of five huge modules (each with a diameter of 6 meters, a length of 2.5 meters, and a weight of 50 tonnes), will be used in the Compact Muon Solenoid (CMS) experiment to be performed at CERN once the Large Hadron Collider (LHC) has been completed. The main objective of the CMS experiment is the identification of the elusive Higgs boson, which has never been directly observed. The CMS magnet is the result of a large international collaboration consisting of the Italian Institute of Nuclear Physics, CERN, the Commissariat pour l'Energie Atomique (CEA; France), the Polytechnic of Zurich (ETH-Z; Switzerland) and industries in Italy, France, Switzerland, Germany, Russia and many other countries. The fabrication of the CMS solenoid required a 10-year effort and an investment of about € 80 million. The CMS solenoid should be installed in the LHC by the summer of 2006.

Source:

“Consigned to CERN the last component of CMS magnet”

Italian Institute of Nuclear Physics (March 1, 2005)

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

CERN (March 7, 2005)

CERN announced that the first of the 1232 superconducting dipole magnets has been lowered into the accelerator tunnel of the Large Hadron Collider (LHC). The descent of the 15-meter, 35-tonne dipole marked the start of the LHC's installation. The superconducting dipole magnets will be the most complex components of the LHC, producing extremely high magnetic fields that will be used to bend the trajectory of protons that are being accelerated to a speed close to the speed of light. When the accelerated protons collide, they will release energies of 14 teraelectronvolts (TeV), seventy times higher than those produced by the former LEP collider, for which the circular tunnel (with a circumference of 27 km) was originally built. The lowering of the first dipole magnet coincided with another milestone: the deliver of half the superconducting dipole magnets. The remaining 616 magnets are scheduled to arrive at CERN by the autumn of 2006. The three magnet manufacturing sites at Babcock Noell Nuclear in Germany, Alstom in France, and Ansaldo in Italy are now producing between nine and ten magnets per week. The LHC should be commissioned in 2007.

Source:

“LHC magnets: The great descent”

CERN press release (March 7, 2005)

<http://info.web.cern.ch/Press/PressReleases/Releases2005/PR02.05E1er-aimant.html>

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[Top of Superconductivity Web21](#)