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

Power

Los Alamos National Laboratory (December 3, 2003)

Researchers at the Los Alamos National Laboratory have reported that the use of hot isostatic pressing technology enables the electrical current of magnesium diboride (MgB_2) wires to be significantly increased. MgB_2 wires have the potential to become the lowest-cost superconducting material available, enabling the cost of several superconducting applications, such as magnetic resonance imaging (MRI) systems and electrical generators, to be reduced. Hot isostatic pressing reduces the porosity of MgB_2 wires and increases their current carrying capacity by 45% of that of MgB_2 wires prepared using traditional annealing methods. The increased current carrying capacity enables the size of the wires to be reduced; as a result, the cost of the wire used in an MRI magnet could be reduced from US $3-10/kAm to only $1-2/kAm. Furthermore, the Los Alamos group has fabricated a prototype MgB2 coil that generates magnetic fields above 1 Tesla at an operating temperature of 25 K; this temperature can be reached using commercially available refrigeration units at much lower operating costs. The group's findings were presented at the Materiasl Research Society meeting in Boston, USA. Their research is supported by the US Department of Energy's Office of Electric Transmission and Distribution.

Source:
"A hot time for cold superconductors"
Los Alamos National Laboratory and the US Department of Energy press release (December 3, 2003)
http://www.lanl.gov/worldview/news/releases/archive/03-156.shtml

American Superconductor Corporation (December 4, 2003)

Dr. Greg Yurek, president and CEO of American Superconductor Corporation (AMSC), has received the 2003 Viscount Nuffield Silver Medal from the London-based Institution of Electrical Engineers (IEE) and was also named a fellow of the IEE. The Viscount Nuffield Silver Medal is awarded to the most meritorious contribution to the manufacturing profession. The medal was awarded to Dr. Yurek for his global industry and technology leadership in HTS products and for establishing the world's first commercial volume HTS wire production facility. Dr. Yurek will deliver a lecture in conjunction with the receipt of the award; his presentation may be found at http://www.amsuper.com.

Source:
"American Superconductor Honored For Manufacturing Breakthroughs In High Temperature Superconductor Products"
American Superconductor Corporation press release (December 4, 2003)
http://www.amsuper.com/html/newsEvents/news/10335061601735.html

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American Superconductor Corporation (December 15. 2003)

American Superconductor Corporation (AMSC)'s SuperVAR ™ synchronous condenser was named the "Most Promising Pre-commercial Technology of 2003" at the 5th Annual Platts Global Energy Awards ceremony in New York City. The Global Energy Awards are sponsored by Business Week, a division of The McGraw-Hill Companies. Commented Greg Yurek, chief executive of American Superconductor, "The 2003 blackouts in North America and Europe have made transmission grid stability everyone's concern. Since we shipped the first SuperVAR machine to the Tennessee Valley Authority in November of this year, we have seen significant interest from independent system operators and utilities in using SuperVAR synchronous condensers as a robust new solution to help prevent blackouts by dynamically stabilizing grid voltage."

Source:

"Platts Global Energy Names American Superconductor's Transmission Grid Stabilization Product "Most Promising Pre-Commercial Technology" of 2003"

American Superconductor Corporation press release (December 15. 2003)

http://www.amsuper.com/html/newsEvents/news/106785329856.html

Intermagnetics General Corporation (December 18, 2003)

Intermagnetics General Corporation (IMGC)'s second-quarter net income increased by 21% to US $4.4 million, compared with $3.7 million for the same period in the previous fiscal year (excluding $1 million in non-recurring charges). This increase in mainly the result of increased sales and profits in the Instrumentation sector as well as normalized sales and continued gains from its MRI product line. Second quarter net sales increased to $39.9 million from $36.7 million for the same period in the previous fiscal year. The company's cash positioned was strengthened to a new high of nearly $100 million. IMGC's energy technology subsidiary, SuperPower, reported $977,000 in revenue, nearly twice that of the same period in the previous fiscal year.

Source:

"Intermagnetics Q2 Net Income Climbs to $4.4 Million"

Intermagnetics General Corporation press release (December 18, 2003)

http://ir.thomsonfn.com/InvestorRelations/PubNewsStory.aspx?partner=10215&storyId=100177

MRI

Toshiba America Medical Systems (December 1, 2003)

Toshiba America Medical Systems (TAMS) introduced new enhancements for their Ultra open magnetic resonance imaging (MRI) system at the Scientific Assembly and Annual Meeting of the Radiological Society of North America. New pulse sequences and a Silicon Graphics ® workstation have been added to optimize procedural accuracy and increase productivity by 15-20%. Ultra's powerful gradient technology enables it to deliver advanced clinical capabilities and the higher resolution normally associated with high-field, closed MRI systems. The Ultra system is based on a cryogenless superconducting magnet design and is

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the most powerful whole body open MRI system presently available on the market. The system is five times faster than other open systems and 250% faster than high-field counterparts, with comparable clinical capabilities.
Source:
"TOSHIBA'S ULTRA™ OPEN MRI SYSTEM ENHANCES PROCEDURAL ACCURACY AND PRODUCTIVITY"
Toshiba America Medical Systems press release
(December 1, 2003)
http://216.23.181.196/news/pressreleases/120103-457.htm

Intermagnetics General Corporation (December 18, 2003)

Intermagnetics General Corporation (IMGC) and Invivo Corporation announced that they have signed an agreement for an all-cash transaction in which Intermagnetics will acquire all of Invivo's outstanding shares for US $22 per share. The formal tender offer is expected to commence within 10 business days and to be completed by mid-January, 2004. IMGC expects Invivo's operations to be modestly accretive to earnings during the remainder of the present fiscal year (ending in May), with greater benefits expected for fiscal 2005. Invivo designs, manufactures, and markets monitoring systems for magnetic resonance imaging (MRI) systems.
Source:
"Intermagnetics Agrees to Acquire Invivo Corporation for $22 Per Share"
Intermagnetics General Corporation press release (December 18, 2003)
http://ir.thomsonfn.com/InvestorRelations/PubNewsStory.aspx?partner=10215&storyId=100161

Communication

Superconductor Technologies Inc. (December 4, 2003)

In a series of recent field trials, Superconductor Technologies Inc. (STI)'s SuperLink ™ Rx 850 products demonstrated a consistent and dramatic improvement in wireless network quality. Overall, 12 networks showed a 30% improvement in dropped calls and a 26% improvement in blocked calls (ineffective attempts). These parameters are two of the most important measures of network quality. Some networks also demonstrated a parallel improvement in minutes of use, including a 25% increase in a three-site sector of a mid-sized city. The field trials were conducted for a variety of carriers in both urban and suburban settings. All of the networks showed noticeable improvements, regardless of their base-station equipment or underlying technology. At the conclusion of the trials, most of the carriers purchased the STI solution.

STI's SuperLink Rx 1900 product for PCS systems has also delivered dramatic field-trial results, with an improvement in data transmission speeds by more than 50% in a trial conducted in a large metropolitan area. The improvement in data transmission speeds results from the system's improved sensitivity, allowing signals to be detected at half the strength of that required without the SuperLink solution.
Source:

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"Field Trials With STI's Flagship SuperLink Rx Products Show Dramatic Improvements in Network Quality"
Superconductor Technologies Inc. (December 4, 2003)
http://ir.thomsonfn.com/InvestorRelations/PubNewsStory.aspx?partner=5951&storyId=99308

ISCO International, Inc. (December 5, 2003)

ISCO International, Inc. announced the first commercial sales of its new RF² ™ product line. The sales were the direct result of network improvements demonstrated during multiple-site cluster testing. During the month-long test period, ISCO's RF² solution enabled the number of dropped calls to be reduced by more than 50%. The product is only a fraction of the cost of higher-priced solutions, such as HTS units, but delivers a comparable performance. Strong commercial interest in this product is expected in 2004.
Source:
"ISCO INTERNATIONAL ANNOUNCES COMMERCIAL SALES OF RF² ™"
ISCO International, Inc. press release (December 5, 2003)
http://www.iscointl.com/

ISCO International, Inc. (December 26, 2003)

ISCO International, Inc. has issued an update regarding their ongoing activities. Quarterly revenues are expected to rebound from the low summer levels to reach near record levels, and the company anticipates the posting of their best-ever results. In addition, ISCO's accrued liability of $2 million with a legal firm has been resolved by the exchange of one million shares of ISCO stock. A general purchasing agreement with a major CDMA carrier was also signed during the fourth quarter, and discussion with a number of potential customers are underway. ISCO's expansion of their customer base is expected to continue in 2004.
Source:
"ISCO International Announces Fourth Quarter Update"
ISCO International, Inc. press release (December 26, 2003)
http://www.iscointl.com/

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

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