

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

Power Applications

American Superconductor (July 9, 2002)

American Superconductor Corporation and GE Industrial Systems (a business of the General Electric Company) have announced the sale of a D-VAR voltage regulation system to BC Hydro, one of Canada's largest utilities. The system will be used to moderate voltage problems in Fort St. James, British Columbia, located at the end of a 70 kilometer, 66 kV radial transmission line. At the moment, the line sometimes experiences voltage sags of up to 20% during periods of peak load. Faults and the use of large motors in a nearby lumber mill complicate the line's voltage problems. The new D-VAR system is expected to begin operation by the end of November 2002 and will be used to regulate the voltage to within BC Hydro's specifications, enabling a significant improvement in power reliability.

News Source:

"American Superconductor and GE Receive Third Order for New Voltage Regulation System"

American Superconductor Corporation Press Release (July 9, 2002)

<http://www.amsuper.com/press.htm>

Intermagnetics General Corporation (July 18, 2002)

Intermagnetics General Corporation (IMGC) reported that fourth-quarter net income increased 32 percent to \$3.4 million, or \$0.20 per diluted share, from \$2.6 million, or \$0.15 per diluted share, a year earlier.

Glenn H. Epstein, chairman and CEO said that the close of fiscal 2002 marks a unique milestone year for Intermagnetics. He stated, "We have again exceeded our long-term target of 15 percent annual earnings growth and met our forecasted growth of 17 percent". He added, "We completed key divestitures that allow us to focus on areas of future growth. Additionally, we reached or exceeded targets for operating performance, continued to generate positive operating cash flow and made significant investments in new product and business development."

In regards to continued investments in core businesses and energy technology, Epstein said, "Our ongoing commitment to research and development seeks to continually improve our core products. It is one reason our largest segment, MRI, is the prime driver in our increased earnings and revenues." Epstein added, "Our innovative, high-field-strength MRI magnets have helped our largest customer, Philips Medical Systems, remain at the forefront in developing and marketing magnetic resonance imaging systems. The MRI sector, excluding the results of the divested LTS wire business, turned in a 31 percent increase in revenue for the fourth quarter, yielding a 40 percent increase for the year."

News Source:

"Intermagnetics Reports Q4 Net Income Up 31 Percent to \$3.4 Million" (Intermagnetics General Corporation Press Release, July 18, 2002)

<http://www.igc.com>

IGC-SuperPower (July 18, 2002)

IGC-SuperPower, a subsidiary of Intermagnetics General Corporation, presented a report at the Annual DOE Technical Peer Review stating that it had made substantial progress towards the production of devices designed to provide efficient, reliable, and environmentally responsible solutions for the transmission and distribution of electric power. SuperPower is presently developing manufacturing capabilities for the production of commercial, second-generation high-temperature superconductors and is collaborating with Waukesha Electric systems to develop a 5/10 MVA HTS transformer that will be used to power Waukesha's main manufacturing facility in Wisconsin. SuperPower is on-target to achieve their 2002 calendar goal of the production of a 100 amp-meter HTS tape in longer than one-meter lengths, as well as their 2003 target of a 1000 amp-meter tape in longer than 10-meter lengths. At the moment, they have produced meter-long second-generation HTS tapes with an end-to-end performance of 90 amps (at the temperature of liquid nitrogen), as well as a 30-cm segment with a performance of 110 amps. SuperPower is collaborating with the Los Alamos and Argonne National Laboratories to scale-up their manufacturing capabilities. In addition, SuperPower is nearing completion of its portion of the work on the Waukesha transformer and plans to ship the HTS coil assemblies before September. The company made a major breakthrough by developing an electrical insulation system that can operate at both cryogenic temperatures and high voltages. The final assembly of the transformer will be completed at Waukesha, followed by extensive testing until the end of 2002; the transformer should be operational by 2003.

News Source:

"Intermagnetics' Superpower Subsidiary Reports Substantial Progress Toward HTS Production Goals"
IGC-SuperPower Press Release (July 18, 2002)

<http://www.igc.com>

American Superconductor Corporation (July 19, 2002)

American Superconductor Corporation commented on a status report made by Pirelli Energy Cables and Systems at the US Department of Energy Peer Review in Washington, D.C., regarding the high-temperature superconductor cable demonstration project being undertaken at Detroit Edison's Frisbie substation. After extensive testing of the three HTS cables that have been installed, Pirelli concluded that thermal leaks in the cryostats of two of the cables are significant enough to prevent the cables from being energized. The demonstration project will be continued using the one remaining cable that has been determined to have minimal thermal leakage after further tests are performed to ensure that the leaks are stable. Pirelli hopes to energize this cable by the end of the year. Greg Yurek, chief executive officer of American Superconductor, remained positive, commenting that "Based on the learning from this project and from other HTS cable projects being conducted around the world, and on the excellent performance of our HTS wires, we are confident that HTS cables will continue the march to full commercialization." Previous demonstrations of cable cryostats by Pirelli have been successful, and at least three other cable manufacturers have also successfully demonstrated HTS cables during the last year. Other recent studies have also confirmed the benefits of installing HTS cables in the power grid. A report by RAND (a nonprofit institution in the USA that helps improve policy and decision-making through research and analysis) concluded that ". . . major investments in the power grid in the U.S. will be necessary to meet the need for reliable and affordable electric power and . . . HTS cables could play a significant role in meeting this need."

News Source:

“American Superconductor Provides Update on Detroit Edison and other HTS Cable Demonstrations and on New HTS Cable Market Study”
American Superconductor Corporation Press Release (July 19, 2002)
<http://www.amsuper.com/press.htm>

American Superconductor Corporation (July 24, 2002)

American Superconductor Corporation (AMSC) reported results for the first quarter 2003, which ended June 30, 2002:

Net revenues were \$2.9 million compared with \$1.7 million for the first quarter of fiscal 2002. However, the net loss for the first quarter of fiscal 2003 was \$10.8 million, or \$0.53 per share, compared with a net loss of \$9.0 million or \$0.44 per share for the first quarter of fiscal 2002. The \$11.2 million operating loss for the first quarter of fiscal 2003 was relatively unchanged compared to the first quarter of 2002. Primary uses of cash during the quarter included: funding the \$10.8 million net loss for the quarter; \$7.6 million to reduce the fiscal-year-end accounts payable and accrued expense liabilities resulting from equipment purchases and restructuring and other one-time charges incurred during the fourth quarter of fiscal 2002; and \$4.8 million in capital expenditures in the first quarter, primarily for the Company's new HTS wire manufacturing plant.

Greg Yurek, chief executive officer of American Superconductor stated, “As of June 30, 2002, we have about \$7.3 million in revenue backlog for the last nine months of the fiscal year. The addition of the \$2.9 million recognized as revenue in our first quarter brings our revenue commitments for the fiscal year to \$10.2 million, compared with our guidance of a total of \$20 million to \$28 million in revenue for the full fiscal year.” Yurek added that the backlog as of June 30, 2002 included orders received during the quarter for the Company's new Dynamic-VAR, or D-VAR™ product.

Yurek explained, “Our plan is to end the fiscal year with about \$35 million in cash, cash equivalents and long-term investments on our balance sheet with no long-term debt. We believe we are on track to achieve this goal with no additional cash investments into our company and no monetization of property or equipment assets. He added, “We believe our existing capital resources will be sufficient to fund our operations until fiscal 2005, at which time we expect to reach corporate-wide profitability.”

News Source:

“American Superconductor Reports Fiscal 2003 First Quarter Results” (American Superconductor Press Release, July 24, 2002)
<http://www.amsuper.com/press.htm>

Material

Superconductive Components, Inc. (July 1, 2002)

Superconductive Components, Inc., has announced a corporate restructuring of the company: two previously separate divisions, Target Materials, Inc. and SCI Division, have been combined to form SCI Engineered Materials. The change is expected to better align the company's strengths with its growth opportunities by streamlining the organization and placing greater emphasis on key commercial markets. Daniel Rooney, President and Chief Executive Officer, stated that “Our strategy

is to develop and provide engineered materials for a variety of applications in the advanced ceramics, optical materials, and high-temperature superconductive and non-superconductive markets. We will continue to utilize our core competencies for multi-component oxides, and the fabrication of ceramic and metal sputtering targets.”

News Source:

“Superconductive Components, Inc. Announces New Corporate Structure”

Superconductive Components, Inc. Press Release (July 1, 2002)

<http://www.investquest.com/iq/s/scci/ne/news/sccinewprescfo.htm>

Sensor

Oxford Instruments (July 1 and 3, 2002)

Oxford Instruments has signed an agreement with Cambridge University to create a new laboratory, bringing together the UK's two top superconducting detector groups in what is expected to be a 20-year collaboration. The new facility will be located at the Cavendish Laboratory in Cambridge University and will conduct research on a new generation of analytical techniques for the physical and biological sciences. The team will develop advanced superconducting detectors and optical components for the entire electromagnetic spectrum, including instruments to study the very earliest moments of the Big Bang, find galaxies beyond the edge of the currently observable universe, enable the creation of a new generation of x-ray astronomy satellites, and provide sub-cellular images of DNA and other biological materials. Dr. Stafford Withington of Cambridge University's Astrophysics Group, who will head the new laboratory, commented that “. . . we will be in an exciting position to support the activities of many different international organizations. For example, submillimetre-wave and THz superconducting electronics for the Particle Physics and Astronomy Research Council, optical and x-ray superconducting detectors for the European Space Agency and the European Southern Observatory.” Oxford Instruments plans to license its intellectual property to the laboratory and endow the university with a donation of equipment, complementing the infrastructure provided by a recent £3.5m government grant to the University. In return, Oxford Instruments will receive a royalty from any future commercial developments arising from the use of its intellectual property within the new facility.

News Source:

“Oxford Instruments sign collaboration agreement with Cambridge University”

“Superconducting cameras to photograph the Big Bang”

Oxford Instruments plc. Press Releases (July 1 and 3, 2002)

<http://www.oxford-instruments.com/OIGNWP507.htm>

<http://www.oxford-instruments.com/SCNNWP509.htm>

Communication

Conductus (July 11, 2002)

Conductus is now expecting second quarter revenues to be below previous guidance and analyst estimates: unaudited total revenues of approximately US \$ 1.6 to \$ 1.7 million for the second

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quarter ending June 30, 2002, are now expected, compared to prior estimates of US \$ 2.0 to \$ 2.4 million. The Company's revenues for the quarter ending March 31, 2002, were US \$ 2.0 million. The uncertainties of the general economy and the challenging environment in the wireless telecommunications sector are thought to be causing delays in the purchasing decisions of Conductus' customers. The final second quarter financial results will be announced on August 6, 2002.

News Source:

"Conductus Announces Second Quarter Revenue Expectations"

Conductus Press Release(July 11, 2002)

<http://www.conductus.com/pressReleases/press94.html>

Superconductor Technologies Inc. (July 24, 2002)

Superconductor Technologies Inc. (SCON) ("STI") announced financial results for the quarter and six months ended June 29, 2002:

Total net revenues for the second quarter 2002 were \$6.1 million, an increase of 44 percent versus \$4.2 million for the second quarter ended June 30, 2001, and an increase of 31 percent over the first quarter of 2002. Net commercial product revenues for the second quarter 2002 were \$5.3 million, an increase of 81 percent compared to \$2.9 million in the year ago period, and an increase of 42 percent over the first quarter 2002. The total net loss for the quarter ended June 29, 2002 was \$6.0 million versus a loss of \$3.5 million for the quarter ended June 30, 2001.

Thomas, STI's president and CEO stated, "Financial results for the second quarter continued to benefit from strong commercial sales of our SuperFilter products to two major customers." He added, "Our total net revenues were slightly below plan primarily as a result of a delay in a government contract, which has now slipped into the second half of 2002. In a difficult wireless sector, we still have the benefit of reasonable visibility and backlog for much of 2002, based on existing supply contracts. However, as we announced on July 15 we have modestly lowered our guidance for the full year, as previously anticipated domestic and international orders have been pushed out."

Based primarily on its expected lower sales volumes, STI now expects to achieve positive gross product margins in the fourth quarter of 2002. Moreover, the company estimates that it can achieve quarterly breakeven operating results based upon total quarterly net revenues in the range of \$11 million to \$12 million.

Thomas concluded that demand for STI's HTS solutions is growing as network capacity is strained and interference becomes increasingly problematic. Looking ahead, he remained confident that ultimately STI will deliver profitable and sustainable growth as industry spending normalizes and accelerates

News Source:

"Superconductor Technologies Inc. Reports Second Quarter 2002 Results" (Superconductor Technologies Inc Press Release; July 24, 2002)

<http://www.suptech.com>

Superconductor Technologies Inc. (July 30)

The Deloitte & Touche "Technology Fast 50" program has named Superconductor Technologies Inc. as one of the top fifty fastest growing technology companies in the Los Angeles area. The program based its present rankings on the percentage of growth in fiscal year revenues over a five-year period (1997 – 2001). Superconductor Technology Inc. experienced a 49% growth in

revenues between 1997 and 2001, mainly as a result of the commercialization of their high-temperature superconductor technology and the introduction of their SuperLink™ Solutions for the wireless industry. In 1997, 98% of Superconductor Technology's revenues came from government contracts. By 2001, revenues for commercial products accounted for 61% (US\$ 12.4 million) of their overall earnings, and company officials expect this figure to approach 80% in fiscal 2002. Furthermore, Superconductor Technologies expects to achieve a growth in revenues of more than 75% for fiscal 2002, compared to the previous fiscal year.

News Source:

"Superconductor Technologies Inc. Named One of Los Angeles Area's Fastest Growing Technology Companies in Deloitte and Touche 'Fast 50' Program"

Superconductor Technologies Inc. Press Release (July 30, 2002)

<http://www.suptech.com>

High Energy Physics

German Science Council (July 15, 2002)

A working group established by the German Science Council, at the request of the German Federal Ministry of Education and Research, has assessed nine large-scale science facilities proposed by various institutions. A sub-panel of experts, including external specialists from Europe and abroad, examined the plans for each facility. The Science Council then placed the assessments of each facility in the context of the national and international development of the concerned research fields and considered the overall importance of each facility in terms of science policy. One of the facilities included in the Science Council's assessment was the TeV-Energy Superconducting Linear Accelerator (TESLA), which is being developed under the supervision of the Deutsches Elektronen-Synchrotron (DESY) in conjunction with partners from around the world. The facility is predicted to cost a total of Euro 3.45 billion and will provide answers to fundamental questions in the area of elementary particle physics and cosmology. The Science Council classified this facility in its second category: projects that when implemented will provide important new research infrastructures, but for which certain questions require clarification before support can be offered. Consequently, the Science Council has asked the Federal Government to revise and resubmit the proposal for this facility.

News Source:

"German Science Council releases views on nine large-scale facilities for basic scientific research"

German Science Council Press Release (July 15, 2002)

http://www.eurekalert.org/pub_releases/2002-07/wc-gsc071502.php

For further information, <http://www.wissenschaftsrat.de>

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[Top of Superconductivity Web21](#)