

What's New in the World of Superconductivity in October

Power Applications

Intermagnetics General Corporation (October 5, 2001; October 25, 2001)

Intermagnetics General Corporation has sold its low-temperature superconducting materials business, IGC-Advanced Superconductors (Waterbury, Connecticut, USA) to Outokumpu Copper Products Oy, a subsidiary of Outokumpu Group of Finland, for approximately US \$32 million. The sale includes a six-year strategic supply agreement under which Intermagnetics will purchase a substantial portion of the LTS wire it requires for the manufacturing of superconducting magnets for MRI applications. Intermagnetics will receive up to an additional US \$ 4 million if it meets the levels of LTS wire purchases specified by the agreement over the next two years. Glenn H. Epstein, President and Chief Executive Officer of Intermagnetics, commented that "This divestiture will permit us to reallocate substantial capital to our ongoing growth initiatives, which include our continuing efforts to produce even more advanced MRI magnet systems, expand our instrumentation business and to develop second generation high-temperature superconductors and related devices designed to improve transmission and distribution of electric power."

News Source:

"INTERMAGNETICS AGREES TO DIVEST
LOW-TEMPERATURE SUPERCONDUCTOR DIVISION"
(Intermagnetics Press Release; October 5, 2001)

"INTERMAGNETICS COMPLETES DIVESTITURE OF
LTS DIVISION"

(Intermagnetics Press Release; October 25, 2001)

<http://www.igc.com>

Oak Ridge National Laboratory (October 16, 2001)

The Oak Ridge National Laboratory's Superconductivity Program has been selected as a partner for three new superconductivity proposals being negotiated by U.S. industry. The three new proposals are for the development of a new high-temperature superconductor generator, a long-length high-temperature superconducting power cable, and the transformer component of a high-temperature superconducting substation. For the generator project, ORNL will perform studies on conductor measurement. The proposed generator would be more efficient, have a higher power-production capacity, and improved reactive power capability, compared to conventional generators of a comparable class. For the cable project, ORNL will provide research support for the development of a 1,000-foot long cable, to be installed in

Columbus, Ohio. ORNL will also provide research support to the substation transformer project. This project consists of the demonstration of a prototype high-temperature superconducting transformer that can convert electricity from 66 kV to 12 kV for distribution circuits.

News Source:

"ORNL to partner with industry on three new proposals"
(ORNL Press Release; October 16, 2001)

http://www.ornl.gov/Press_Releases/current/Science_and_Technology.html

American Superconductor Corporation (October 16, 2001)

American Superconductor Corporation has been selected by General Electric Company to be the primary supplier of HTS wire for the development of the world's first 100 MW HTS generator. The HTS generator project, valued at US \$ 26 million, is one of the seven projects recently announced by the U.S. Department of Energy Superconductivity Partnership Initiative (SPI) program. GE believes that its innovative HTS generator will represent a breakthrough in high-efficiency generators with the potential to save several billion kilowatt hours annually, leading to millions of dollars in energy savings, reduced emissions, and the enhanced competitiveness of U.S. utilities in global markets. American Superconductor expects its first generation HTS wire to meet GE's cost and performance targets for commercial generators.

News Source:

"American Superconductor to Supply High Temperature
Superconductor Wire for World's First 100 Megawatt
Superconductor Generator"

(American Superconductor Corporation Press Release;
October 16, 2001)

<http://www.amsuper.com>

Nexans (October 25, 2001)

Nexans has signed an agreement with the Korean Electrotechnology Research Institute (KERI) for the supply of HTS wire. The agreement is part of the research activities specified by the 21st Century Frontier Research and Development Project, sponsored by the Korean Ministry of Science and Technology. The Korean Ministry of Science and Technology plans to invest 85 million euros on superconductivity applications over the next 10 years. The wire will be manufactured by Nexans' Korean subsidiary and will be used for various industrial applications, including superconducting cables, transformers, motors, and fault current limiters.

News Source:

"Nexans: Korean Government Research Institute chooses
Nexans for the supply of HTS Wire"

(Nexans Press Release; October 25, 2001)

<http://www.nexans.com>

American Superconductor Corporation (October 29, 2001)

American Superconductor Corporation (NASDAQ: AMSC), reported that the net loss for the second quarter of fiscal 2002 was \$9.12 million, or \$0.45 per share, compared with a net loss of \$5.0 million or \$0.25 per share for the second quarter of fiscal 2001. Net revenues for the second quarter of fiscal 2002 were \$3.26 million compared with \$4.72 million the second quarter of fiscal 2001.

Greg Yurek, chief executive officer, said that although revenues are down year-over-year, AMSC is on track with their earlier guidance of \$20 to \$30 million in revenues and earnings per share in the range of (\$1.45) to (\$1.75). He added that he expected revenues for the full fiscal year to be on the low-end of this range primarily because their PQ-SMES sales continue to be affected by the slower-than-anticipated recovery in the semiconductor industry. However, AMSC has implemented cost controls that should keep their earnings on a per-share basis between (\$1.60) and (\$1.75).

Reported losses for the quarter and first half of the fiscal year reflect planned investments in research, product development, manufacturing scale-up, and the primary use of cash this quarter was for plant and equipment associated with the creation of the world's first commercial HTS wire manufacturing plant in Devens, Massachusetts

News Source:

"American Superconductor Reports Fiscal 2002 Second Quarter Results"

(American Superconductor Press Release. October 29, 2001)

<http://www.amsuper.com>

Magnet

University of Illinois at Urbana-Champaign (October 1, 2001)

A new technique for the rapid identification and characterization of proteins in the human proteome has been developed at the University of Illinois at Urbana-Champaign. The technique involves the direct fragmentation of protein ions, which is thought to be a more efficient method than exhaustive peptide mapping. The instrumentation used to identify and characterize proteins combines Fourier-Transform Mass Spectrometry with electrospray ionization and separation methods. The core component of the system is a liquid-helium cooled superconducting magnet. The magnet is actively shielded using a counter-propagating magnetic field to cancel the magnet's field. At the center of the magnet, however, the magnetic field strength reaches 9.4 Tesla. Fractionated proteins are inserted into the magnet where they spin at different frequencies, depending on their mass and charge. The orbits of the fractionated proteins are excited to higher radii and eventually fly past sensitive detector plates in the mass spectrometer. A computer then analyzes the data to identify and characterize the protein. The technique can be used to process multiple proteins simultaneously. Further details are reported in the October issue of *Nature Biotechnology*.

News Source:

"Automated analytical platform facilitates identification of proteins"

(University of Illinois at Urbana-Champaign Press Release; October 1, 2001)

http://www.eurekaalert.org/pub_releases/2001-10/uoia-aap100101.php

Sensors

CardioMag Imaging, Inc. (October 25, 2001; October 30, 2001)

CardioMag Imaging Inc. celebrated its Official Opening on October 29, 2001, at its main headquarters in Schenectady, New York, USA. According to Carl Rosner, CardioMag Imaging's board chairman and a world recognized expert on superconductivity applications, the instrumentation developed by CardioMag Imaging uses superconducting SQUID sensors and electronics to enable the quick, reliable, non-invasive, contactless, and relatively inexpensive diagnosis of cardiovascular disease, especially early stage ischemia. Known as magnetocardiography (MCG), the underlying technique uses SQUIDS to measure and display the magnetic fields generated by the human heart. CardioMag Imaging's innovations enable their MCG system to operate in an "open" environment, eliminating the need for the expensive shielded rooms that were required by previous MCG systems. This advancement represents a major economic advantage for a technology that can be used to improve patient outcome and save lives through early detection and treatment. CardioMag Imaging's MCG system is currently being used in clinical trials on its way for approval by the U.S. Food and Drug Administration.

News Source:

"Cardiology Instrument Company Officially Opens in Schenectady, New York"

(CardioMag Imaging, Inc. Press Release; October 25, 2001)

"Firm develops heart-imaging device"

(Cardio Mag Imaging, Inc. Press Release, by Kevin Harlin; October 30, 2001)

<http://www.cardiomag.com>

Telecommunications

Conductus, Inc. (October 4, 2001)

Conductus, Inc. (NASDAQ: CDTs), claims that the ISCO '215' patent is both invalid and unenforceable and accused ISCO International of inequitable conduct and unfair competition. In a motion to amend its answer and counterclaim to ISCO International's complaint for infringement of the '215' patent for "Cryoelectronically cooled receiver front end for mobile communications system," Conductus seeks to add a defense of inequitable conduct and a counterclaim for a declaration of unenforceability of the patent due to inequitable conduct. Conductus also has filed to add additional federal and state law counterclaims of unfair competition. Conductus is seeking both compensatory and punitive damages as well as attorneys' fees and costs.

During the review of the claims in the '215 patent, Conductus identified prior art (technology that was already known). Conductus uncovered evidence that indicates that one of the named inventors attended a conference at which the bypass circuitry was discussed and that packets containing a description of the bypass circuitry were freely available to all that attended. Conductus is alleging that this prior art was known to that inventor at the time the patent application was filed and that the inventor failed to bring this prior art to the attention of the United States Patent and Trademark Office. Intentional concealment is known as "inequitable conduct" which can render an entire patent unenforceable.

Charles Shalvoy, Conductus' President and CEO said that "Intentional concealment from the patent office is a very serious matter and can result in the court declaring the entire patent to be unenforceable."

He added that Conductus has evidence that ISCO was aware both of the prior art and of the inventor's knowledge and concealment of the prior art in connection with the patent application. Shalvoy pointed out that threatening Conductus' customers with an unenforceable patent is a violation of both state and federal law. We expect to pursue our claims vigorously, and seek both compensatory and punitive damages as well as attorneys' fees," concluded Shalvoy.

News Source:

"Conductus Accuses ISCO International of Unfair Competition and Inequitable Conduct; Seeks to Recover Damages in Dispute"

(Conductus Press Release; October 4, 2001)

<http://www.conductus.com>

Superconductor Technologies Inc (October 4, 2001)

Superconductor Technologies Inc. (Nasdaq: SCON) ("STI"), announced today that it has sued ISCO International, Inc. ("ISCO") by filing a motion to amend its answer and counterclaim to ISCO'S complaint for infringement of the '215 patent' for "Cryoelectronically Cooled Receiver Front End For Mobile Communications System."

Originally STI denied ISCO's allegations and asked the court to declare the '215 patent' invalid and not infringed. Now, STI is filing to amend its answer and counterclaim to add allegations that ISCO failed to disclose to the Patent Office relevant prior art during the patent application process. STI is also suing ISCO for violations of federal and state law when ISCO threatened STI's customers after having recently been informed of the deficiencies in the patent application process which puts the validity of the '215 patent' in serious doubt. STI is seeking both compensatory and punitive damages, as well as attorneys' fees.

M. Peter Thomas, president and chief executive officer of STI said, "We have obtained evidence that when the patent application was filed, one of the patent's inventors withheld relevant prior art from the patent office. Any such intentional withholding of relevant prior art by an inventor will invalidate a patent. We are outraged that ISCO chose to disregard this material evidence and proceeded to threaten our customers with infringement claims to try to force them into licensing agreements."

News Source:

"Superconductor Technologies Sues ISCO International (Superconductor Technologies Inc.; Press release; October 4, 2001)

<http://www.suptech.com>.

Superconductor Technologies Inc. and AT&T Wireless (October 9, 2001)

Superconductor Technologies Inc. and AT&T Wireless, one of the largest digital wireless networks in North America, announced the deployment of STI's superconducting filter systems throughout the Santa Barbara area. The filters enable the number of dropped or blocked calls to be reduced and the overall call quality to be improved. AT&T Wireless has stated that customer satisfaction is their number one goal, and that the use of STI's superconducting filters enables the customer experience to be enhanced, allowing more calls to be placed at anytime and from anyplace.

News Source:

"AT&T Wireless and Superconductor Technologies Go the Extra Mile to Guarantee Superior Network Quality for Customers"

(Superconductor Technologies Inc. Press Release; October 9, 2001)

<http://www.suptech.com>

Conductus, Inc. (October 10, 2001)

Conductus, Inc. (NASDAQ: CDTs), expects revenues for the third quarter and the full year to be below previous analysts' estimates. Based on preliminary closing information, the Company expects unaudited total revenues of approximately \$1.6 million for the quarter ended September 29, 2001, as compared to \$1.7 million in the prior quarter. The Company plans to release final financial results for the third quarter on Tuesday, November 13, 2001.

Charles Shalvoy, President and CEO of Conductus said, "We believe the challenging economic environment and the resulting impact this has had on the wireless telecommunications market coupled with recent major events have had an effect on both the third quarter and our expectations for the remainder of 2001. Based on current projections, we expect revenues for the fourth quarter of the year to be somewhat lower or at about the same level as third quarter revenues." He added, "We feel, however, that the long-term outlook for the wireless market, and for our technology specifically, continues to be strong despite the near-term impact of the recent economic downturn. The growth of wireless technology and the industry trends that create a growing market for our products will continue. We believe that the factors that will lead to our ultimate success are very much still in place and we are merely experiencing a delay due to these general market conditions."

News Source:

"Conductus announces Third Quarter Revenue Expectations"

(Conductus Press Release; October 10, 2001)

<http://www.conductus.com>

ISCO International Inc. (October 12, 2001)

ISCO International Inc. announced that it has received certification for having met the ISO 9001:2000 quality standards established by the International Standards Organization of Geneva, Switzerland. The ISO 9001 standard is recognized as the premier benchmark for manufacturing excellence. To qualify for certification, companies must display an extensive commitment to quality management, customer support, and thorough manufacturing process documentation. According to Dennis Craig, VP of Manufacturing Operations, the ISO certification will make it easier for ISCO International to qualify for programs being developed by many of ISCO's larger customers and OEMS, who demand stringent quality compliance.

News Source:

"ISCO International Achieves Recognition for Manufacturing Excellence Upgrades Systems to Meet ISO 9001 Certification Processes"

(ISCO International Inc. Press Release; October 12, 2001)

<http://www.iscointl.com/>

Superconductor Technologies Inc. (October 24, 2001)

Superconductor Technologies Inc. (NASDAQ: SCON) ("STI") announced results for the third quarter ended September 29, 2001.

Gross commercial product revenues for the third quarter 2001 were \$1.7 million, compared to \$1.6 million in the third quarter of last year. Net commercial revenues were \$1.2 million, compared to \$1.2 million for the same period in the previous year. Due to the decline in government revenues, total net revenues for the third quarter 2001 decreased to \$2.1 million, versus \$2.4 million for the third quarter ended September 30, 2000. The total net loss for the quarter ended September 29, 2001 was \$4.8 million versus a loss of \$9.3 million for the quarter ended September 30, 2000.

Peter Thomas, president and chief executive officer of Superconductor Technologies Inc. said, "Like many other companies in the telecom equipment arena, our third quarter results were impacted by the spending slowdown in

our industry." He added, "We continued to manage the business efficiently during this period of slower sales, carefully monitoring expenses and conserving cash during the quarter. We expect that revenues for the fourth quarter 2001 will increase from the levels in the third quarter 2001, and we continue to expect that 2002 will be a solid growth year for STI."

"Our growth strategy remains intact, and the company is making solid progress introducing our technology in markets around the world," continued Mr. Thomas. "We recently shipped our second round of prototype units for qualification for 3G in Japan. Our initiatives in China look increasingly promising, and we believe STI can become an integral part of China's plan to roll out their next generation mobile cellular infrastructure. I believe that these developments bode well for STI's future, and I look forward to reporting on our continued progress on both the international and domestic fronts."

"Finally, the demand drivers for our core technology are becoming increasingly apparent across the industry. STI offers compelling solutions that enable carriers to expand their capacity and coverage at attractive costs, and every day we further our market leading field experience and proven equipment reliability. With our suite of HTS wireless product solutions, manufacturing capabilities and aggressive sales efforts, STI is well positioned for expected growth in 2002 and beyond as much needed current and next generation infrastructure is added around the world," concluded Mr. Thomas.

The company's balance sheet remains strong, with \$19.7 million in cash and cash equivalents, \$23.7 million in working capital, and \$303,000 in long-term debt, as of September 29, 2001.

News Source:

"Superconductor Technologies Inc. Reports Third Quarter 2001 Results" (Superconductor Technologies Inc. Press Release; October 24, 2001)

<http://www.suptech.com>

(Akihiko Tsutai International Affairs Department, ISTECC)