

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

New Organization

Coalition for the Commercial Application of Superconductivity (October 7, 2002)

The Coalition for the Commercial Application of Superconductivity (CCAS) recently announced its intention to expand its reach and to stimulate the accelerated commercial development of the superconductor industry by supporting superconductivity-related programs and activities at the US federal and state level. CCAS will also act as a unified voice on public policy issues of common interest to the superconductor industry in the United States. Emphasis will be placed on attracting new members, educating key stakeholders on the value of superconductivity, and advancing global collaboration to accelerate the adoption of applications using superconductivity technology.

Of special importance to CCAS, the impending resolution of regulatory issues in the US is expected to prompt the electric power industry to begin investing in innovative grid-strengthening technologies. The chairman of CCAS, Phillip J. Pellegrino, commented that "The superconductor industry stands at a critical juncture as the projected maturation of high-temperature superconductor technology coincides with the convergence of a number of pressures on the electric power industry."

In addition to the power industry, CCAS will also work to promote emerging superconductivity applications in the areas of medical systems, transportation, telecommunications, information technology, scientific instrumentation, and energy technology.

CCAS is the successor to the Council on Superconductivity for American Competitiveness (CSAC), which was established in 1987 as a national trade association for the superconductivity industry in the United States. CCAS maintains an Internet presence at www.ccasweb.org.

Source:

"New Coalition for the Commercial Application of Superconductors (CCAS) Formed"

CCAS Press Release (October 7, 2002)

http://www.ccasweb.org/press/2002/CCAS_100702.pdf

Power

American Superconductor Corporation (October 9, 2002)

American Superconductor Corporation has received a US \$ 2 million cost-sharing grant from the U.S. Department of Commerce's Advanced Technology Program to accelerate the scale-up of its patented, high-volume, low-cost process for manufacturing HTS wires with a coated conductor architecture. The funds will be received over a period of two years and will be specifically used to develop and implement novel thermal processing equipment that should enable significant performance and cost improvements. Greg Yurek, chief executive officer of American Superconductor, announced "During the last quarter, we achieved breakthrough results that put us on a path to beat the price/performance ratio of copper wire. The ATP award will help us accelerate the scale-up of our manufacturing process and bring coated conductor wires to market sooner than we anticipated." The scaled-up version of American Superconductor's proprietary coated conductor manufacturing process

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will require an integrated control system and the cleanliness of a semiconductor fabrication process, the reel-to-reel web handling and process throughput of the textile industry, and the temperature capabilities of optical fiber processing. The ATP funding will help American Superconductor to achieve these goals. American Superconductor now believes that its coated wires should be available in long lengths (in limited volume) by 2005, two to five years ahead of previous industry expectations. Furthermore, the new coated wire should cost two to five times less than the multi-filamentary wires presently available, a feature that is likely to lead to a large expansion in the market for HTS products.

Source:

“American Superconductor Awarded \$2 Million Grant by Department of Commerce to Accelerate Scale-Up of HTS Coated Conductor Wire”

American Superconductor Corporation Press Release (October 9, 2002)

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

American Superconductor Corporation (October 29, 2002)

American Superconductor Corporation has achieved reproducible results in the electrical performance of its over 10-meter lengths of second-generation coated conductor composite HTS wire. These results are significantly ahead of the goals previously set by the US Department of Energy (ten-meter lengths of wire with a minimum electrical performance of 50 Amperes per centimeter of width by December 2003). The present results announced by American Superconductor more than double the electrical performance goal at a date that is 15 months earlier than the target. The Oak Ridge National Laboratory recently confirmed the performance of the American Superconductor composite wire to be more than 100 Amps per centimeter of width over 10 meters. The results have accelerated the time-to-market expected for composite HTS wire technology, with commercial quantities of wire expected to become available in 2005.

Source:

“American Superconductor Shatters Long-Length Second Generation HTS Wire Goal Set by U.S. Department of Energy”

American Superconductor Corporation Press Release (October 29, 2002)

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

American Superconductor Corporation (October 31, 2002)

American Superconductor Corporation has issued an update on recent advances in the utilization of HTS wires for power generation, transmission and distribution, and electric motors for ship propulsion.

Power Generation: On October 28, 2002, General Electric Power Systems announced plans to develop a highly efficient electric generator based on HTS wires. General Electric has created a 1.5 MVA demonstration generator using HTS wire made by American Superconductor Corporation and plans to build and test a utility-scale 100 MVA generator; American Superconductor has been named as the primary supplier for this project.

Power Transmission and Distribution: The most recent issue of the Digital Power Report focused on the need to upgrade the power transmission and distribution grid in the US. American Superconductor's D-SMES and D-VAR™ systems are examples of the commercially available Flexible AC Transmission Systems (FACTS) cited in the report as power electronic products with the ability to

greatly increase the grid reliability and power flow of existing grids. HTS power cables, presently at the demonstration stage of development, were also mentioned as a key technology for relieving grid congestion and upgrading power networks.

Ship Propulsion Electric Motors: MSCL Inc., an international maritime consultancy, has stated that electric drives are expected to become the dominant market (in ship propulsion) within the next decade. The consultancy estimated that the market for electric ship propulsion motors would grow from its present value of US \$ 400 million per year to between \$ 2 to 4 billion per year within ten years. HTS ship propulsion motors are significantly smaller in size and weight and more efficient than conventional electric motors. These benefits could result in large cost savings for ship operators.

Source:

"American Superconductor Provides Update on Superconductors
for Power Applications"

American Superconductor Corporation Press Release (October 31, 2002)

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

American Superconductor Corporation (November 1, 2002)

American Superconductor Corporation has acquired all of the assets of Nordic Superconductor Technologies A/S, a subsidiary of Denmark's NKT Holding A/S. NST has developed and marketed HTS wire to customers in Europe, Asia, and North America. American Superconductor Corporation will acquire all of NST's patents, manufacturing equipment, stock materials, work-in-process, and know how. The wire manufacturing facilities in Denmark will be closed, and the purchased assets will be incorporated into American Superconductor's operations. The two companies will work together to address the needs of NST's current customers, fulfill an existing order backlog, and to support new projects already under discussion. NKT will receive 546,000 shares of American Superconductor Corporation Common Stock, valued at US \$ 2.1 million (as of October 31, 2002), for the sale of NST's assets. Greg Yurek, chief executive officer of American Superconductor, commented that "This acquisition of NST provides us with some very important assets and the opportunity to expand our customer base."

Source:

"American Superconductor Acquires Assets of Nordic Superconductor Technologies
from Denmark's NKT Holding"

American Superconductor Corporation Press Release (November 1, 2002)

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

Communication

Conductus, Inc. (October 10, 2002)

Conductus expects their third-quarter (ending September 30, 2002), unaudited total revenues to amount to between US \$1.1 and 1.3 million; this amount is below their previous estimate of \$1.6 million. The company's final financial results will be announced on Nov. 12. Conductus also announced that it has implemented an expense-reduction program that will include a cut in their workforce by approximately 30% and a 15% salary reduction for remaining employees. These

changes are expected to reduce salary-related expenses by 35 to 40%. The company cited the challenging economic environment and delayed purchasing decisions for the reduction in expected revenue.

Source:

"Conductus Announces Third Quarter Revenue Expectations"

Conductus Inc., Press Release (October 10, 2002)

<http://www.conductus.com/newsroom.html>

Superconductor Technologies Inc. (October 10, 2002)

Superconductor Technologies Inc. expects its third quarter (ending September 30, 2002) unaudited net revenues to amount to approximately US \$ 4.6 to 4.8 million dollars, down from previous expectations of \$ 5.5 to 6.0 million. The lower net earnings are the result of a delay in a purchasing order from a government agency; Superconductor Technologies met its commercial revenue goals for the third quarter. The government contract mentioned above should be finalized in October, and Superconductor Technologies expects to meet its fiscal year revenue expectations of \$22 – 25 million. M. Peter Thomas, President and Chief Executive Officer of Superconductor Technologies Inc., commented, "For the 2002 fiscal year, we expect commercial revenue to exceed prior years' results by at least 130 percent. We are also seeing indications in the market that our growth will continue through 2003 and beyond." The final third quarter financial results will be released in early November.

Source:

"Superconductor Technologies Inc. Announces Preliminary Third Quarter Results"

Superconducting Technologies Inc. Press Release (October 10, 2002)

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

Superconductor Technologies Inc. and Conductus, Inc. (October 10, 2002)

Superconductor Technologies Inc. and Conductus, Inc. have signed a definitive agreement to merge; the new company will retain the Superconductor Technology name and will combine the expertise, technologies, and assets of the two companies. The companies have also secured firm commitments for US \$ 15 million in investments from existing shareholders and affiliated entities. This investment is contingent upon the closing of the merger. Conductus shareholders will receive 0.6 shares of newly issued Superconductor Technology stock for each outstanding share of Conductus common stock; this transaction is expected to close by December 31, 2002. M. Peter Thomas, President and Chief Executive Officer of both the present and the new Superconductor Technologies Inc., stated that "STI will have the best in cryogenic cooling technology, filter design, wafer fabrication technology, back end assembly and testing, production, marketing, sales and service. The combined company will be a much stronger force within the telecommunications equipment sector, and will be well positioned to benefit from the industry's recovery, which we believe will begin sometime next year." Charles Savoy, President and Chief Executive Officer of Conductus and Executive Vice President of the new Superconductor Technology, commented "We are committed to implement a smooth, timely combination of our two organizations and have established multiple integration teams, with key individuals from both companies, which will develop consolidation plans for each of the major areas of our business."

Source:

"Superconductor Technologies Inc. and Conductus Inc. Agree to Merge"

Superconductor Technologies Inc. Press Release (October 10, 2002)

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

"Superconductor Technologies Inc. and Conductus Inc. Agree to Merge"

Conductus, Inc. Press Release (October 10, 2002)

<http://www.conductus.com/newsroom.html>

Conductus, Inc. (October 15, 2002)

Conductus, Inc. has been awarded a contract for the development of advanced ultra-narrow, tunable filter technology from the US Naval Research Laboratory (NRL). The contract will involve advances in RF design, control technology for tunable systems, and system design to meet the demanding specifications of Naval application requirements. The contract is valued at US \$ 2.74 million over two years. The goals of the project have been outlined as a laboratory demonstration of the technology by the end of the first program year, a single-channel prototype system delivered to the Navy for testing by the middle of the second program year, and a multi-channel prototype system delivered to the Navy by the end of the second program year. Charles Shalvoy, President and Chief Executive Officer of Conductus, explained, "If we are successful in developing ultra-narrowband tunable filter technology, the result will be a major improvement in the ability of receivers to detect and capture weak signals in noisy environments."

Source:

"Conductus Receives \$2.74 Million Contract To Develop Ultra-Narrow, Tunable Filter Technology"

Conductus, Inc. Press Release (October 15, 2002)

<http://www.conductus.com/newsroom.html>

Superconductor Technologies Inc. and Conductus, Inc. (October 31, 2002)

Superconductor Technologies Inc. and Conductus, Inc. announced that the results of the recent Markman hearing appear to strengthen their position in the "215 patent" infringement lawsuit brought against them by ISCO International Inc. Markman hearings are intended to establish the scope of a patent claim and determine how the patent terms should be construed or defined. ISCO International claims that Conductus' ClearSite product and STI's SuperFilter product infringe ISCO's U.S. Patent No. 6,263,215. Both STI and Conductus deny these allegations and have filed various counterclaims against ISCO, including claims of unfair competition. Regarding the results of the recent Markman hearing, Charles E. Shalvoy, President and CEO of Conductus commented, "Both STI and Conductus believe the results of this Markman ruling strengthen our case for non-infringement, invalidity and unenforceability." The case will go to trial on March 17, 2003.

Source:

"Markman Ruling Strengthens Positions Taken by Superconductor Technologies Inc. and Conductus, Inc. in '215 Patent' Dispute, Companies Say"

Superconducting Technologies Inc. Press Release (October 31, 2002)

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

Superconductor Technologies Inc. (October 31, 2002)

Superconductor Technologies Inc. has received two defense-related government contracts from Signal Technology Corporation, a developer of electronic components for defense, space and commercial wireless applications. The contracts involve the development of low-cost "micro-sensors" (incorporating HTS filter technology) that will be used to collect intelligence and surveillance data for military and homeland security applications. Together, the contracts amount to nearly US \$ 3 million and will be fulfilled over the next six to nine months. The contracts will be completed in close collaboration with the Defense Microelectronics Activity (DMEA), which provides microelectronics services to the US Department of Defense. Although Superconductor Technologies has worked with the DMEA in the past, this will be its first undertaking with Signal Technology.

Source:

"Superconductor Technologies Inc. Awarded Government Contracts Worth Nearly \$3-Million for Defense-Related Work"

Superconductor Technologies Inc. Press Release (October 31, 2002)

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

ISCO International, Inc. (November 1, 2002)

ISCO International, Inc. responded to the press release issued by Superconductor Technologies Inc. and Conductus, Inc. regarding the results of the recent Markman hearing. A Markman hearing is held to define the meaning of the terms in a patent claim; in the present case, the court adopted ISCO' International's proposed claim construction on all substantive claim interpretation issues. ISCO International's CEO, Dr. Amr Abdelmonem, stated that "It is puzzling that STI and Conductus could find encouragement from the substantive Markman rulings. We are content to let this process continue on the present path in court."

Source:

"ISCO International Issues Response to Claims of Superconductor Technologies, Inc. and Conductus, Inc. in Patent Litigation"

ISCO International Press Release (November 1, 2002)

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

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

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