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

AMSC's coated conductor wires produced by proprietary high volume, low-cost manufacturing method surpass DOE objectives by more than a year

WESTBOROUGH, Mass., Oct. 29, 2002 -- American Superconductor Corporation (Nasdaq: AMSC), a leading global supplier of superconductor products and power electronic converters for the electric power industry, today announced it has achieved reproducible results in electrical performance over 10-meter lengths of its second generation, coated conductor composite, high temperature superconductor (HTS) wires that are significantly ahead of the goals set by the U.S. Department of Energy (DOE).

The DOE, in order to stimulate the commercial production of lower-cost HTS wires, had previously challenged U.S. industry to produce, by December 2003, second generation, coated conductor wires in 10-meter lengths with a minimum electrical performance of 50 Amperes of electrical current per centimeter of width of the tape-shaped wires.

The reproducible results announced by AMSC today better that goal by 15 months and at more than double the electrical performance of the DOE target. AMSC's wire performance was verified by the DOE's Oak Ridge National Lab to be over 100 Amps per centimeter of width over 10 meters. The Oak Ridge National Lab has partnered with AMSC and has developed several key technologies for the manufacture of second generation wires. AMSC has incorporated certain of the Oak Ridge technology into its proprietary manufacturing process.

"The exciting and important aspect of these goal-breaking results is that the wires are being made using a high volume, low-cost manufacturing method," said Greg Yurek, chief executive officer of American Superconductor. "This means we can expect to scale up this process to make long lengths of second generation, coated conductor wires with excellent electrical performance, and we can expect to achieve this performance in wires with a price-performance ratio below that of copper. On the basis of these and related results we have in hand, we intend to accelerate our second generation product development efforts. We will continue to focus on production of second generation wire that is a form, fit, function replacement for our current commercial HTS wire."

Yurek also commented that the wire results announced today put AMSC on a path to achieve price/performance goals that are expected to accelerate the broader market adoption of HTS-based applications. "When we initiated research on second generation wires in 1995, we projected that it would take up to 10 years to achieve commercial price-performance ratios in commercial quantities of this wire," said Yurek. "Based on the results we now have in hand, we believe we are going to achieve that goal in 2005 as forecasted."

"These promising results are significant for two very important reasons," said James Daley, Electric Reliability Team Leader in DOE's Office of Energy Efficiency and Renewable Energy. "First they reinforce the value of the partnerships between our national labs and private industry in helping to develop and bring new technology to market and providing a great return on our taxpayer's investment. Second, the results mean that there is now a faster time-to-market for this promising technology

allowing us to apply the benefits of HTS products to meet the needs of our country's electrical infrastructure."

In 1995, when AMSC initiated research on second generation HTS wires, it partnered with EPRI, the electric utility think tank, to investigate multiple pathways to achieve high performance, low cost second generation wires. "American Superconductor has achieved a significant benchmark on the critical path to commercial second generation HTS wire," said Paul Grant, science fellow at EPRI. "DOE and the industry now need to set a new, higher benchmark for December 2003."

For over 15 years, AMSC has been at the forefront in commercializing HTS wire technology for use in a variety of electric power applications. The company's first generation, multi-filamentary composite wires are commercially available today for applications such as power cables for use in urban power grid upgrades, high efficiency utility generators and in the development of advanced marine propulsion motors and other specialty magnets. "We expect our first generation wires to remain the workhorse of the industry for the next 3-4 years until second generation wires are commercially available in significant quantities," continued Yurek. "Because the initial volume of second generation wire will be limited, customers for our first generation wire will be first in line for the lower cost product as it becomes available."

AMSC has demonstrated its ability to manufacture multiple 10-meter lengths of second generation wires each with performance much better than the 50 Amp/cm-width DOE milestone. Today's announcement is significant because the proprietary process chosen by AMSC is expected to yield HTS wires two to five times lower in cost with roughly the same electrical performance level as first generation HTS wires now in production by AMSC.

A comparison of the multi-filamentary and coated conductor composite wire architectures can be seen at <u>http://www.amsuper.com/wirefact.htm</u>.

About American Superconductor

American Superconductor Corporation is a world leader in developing and manufacturing products using superconductor wires and power electronic converters for the electric power infrastructure. American Superconductor's products, and those sold by electrical equipment manufacturers that incorporate its products, can dramatically increase the bandwidth and reliability of power delivery grids, reduce manufacturing and operating costs, and conserve resources used to produce electric power. Founded in 1987, the company is headquartered in Westborough, Mass. For more information, visit <u>http://www.amsuper.com</u>.

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