



**Press release**

## **Bruker HTS and Nexans Announce Successful Completion of European Superconducting Cable Project**

*“This project demonstrates the leading role Europe can take in developing more efficient, flexible and reliable energy technologies.”*

**Paris, March 17, 2009** - Nexans, the worldwide leader in the cable industry, and Bruker HTS GmbH today announced the successful conclusion of the Superconducting Coated Conductor Cable (**Super 3C**) Project in which a high-temperature superconducting (HTS) distribution-level power cable was developed and tested by a European consortium. In the future, HTS cables are expected to enable power links with minimized losses, thereby contributing to the reduction of greenhouse emissions.

The **Super 3C** Project began in June 2004 and ended with the successful test of a 30-meter one-phase HTS cable system in December 2008. The HTS cable achieved its transmitted power target of 17 MegaWatts. It is one of the first cables in the world using state-of-the-art second generation (2G) HTS tapes as current carrying elements. These tapes include a thin HTS layer which constitutes a perfect conductor of electricity when cooled to  $-200^{\circ}\text{C}$ .

Bruker HTS developed a proprietary HTS-copper hybrid conductor which facilitates reliable manufacturing and operation of new power cables using HTS technology. The 2G hybrid conductor utilizes the advantages of both superconductivity and copper, enabling it to work and interconnect smoothly with conventional network components. In the course of the project, Nexans and Bruker HTS jointly developed and implemented sophisticated methods for assembling the 2G hybrid conductors in the cable. Altogether, Bruker HTS manufactured and tested nearly 4,000 meters of 2G hybrid superconductors for the **Super 3C** cable.

Nexans manufactured the **Super 3C** cable, including the cryogenic envelope which allows the temperature of the cable core to be maintained at  $-200^{\circ}\text{C}$  in a flow of liquid nitrogen. Nexans also developed and manufactured specific cable terminations for this project.

The 5.2 million Euros project was funded in June 2004 with a 2.7 million Euros grant by the European Union under its 6<sup>th</sup> Framework Programme for Research and Technological Development. Nexans acted as the project coordinator. Bruker HTS was responsible for the largest single work package, specifically the development and delivery of 2G HTS conductors for the cable.

Jean-Maxime Saugrain, Nexans Superconductor Activity Manager and Super 3C Project Coordinator, stated: *“We are proud of this achievement and it demonstrates the leading role Europe can take in developing new ideas to reduce greenhouse emissions and to enable more efficient, flexible and reliable energy technologies. It is of immense*

significance for Europe's competitiveness in the emerging market for efficient HTS solutions."

Dr. Burkhard Prause, Managing Director of Bruker HTS, added: "The **Super 3C** project was an enormous boost for our advanced 2G superconductors and demonstrated their performance and reliability under industrial conditions. I am proud of the team that achieved this and congratulate the entire consortium on this success. It is an important watermark for efficient HTS solutions in Europe and throughout the world."

Seven additional European partners participated in the project, including EON AG (Germany), which provided utility system requirements; the Tampere University of Technology (Finland), which led the cable modeling task with the support of the Bratislava Institute of Electrical Engineering (Slovakia); Instituto de Ciencia de Materials de Barcelona (Spain) and ZFW (Germany), which together supported the HTS tape development and characterization; and Labein Tecnalia (Spain), which led the cable testing program with the support of Air Liquide (France), which provided the liquid nitrogen cooling system.

#### **About Nexans**

With energy as the basis of its development, Nexans, the worldwide leader in the cable industry, offers an extensive range of cables and cabling systems. The Group is a global player in the infrastructure, industry, building and Local Area Network markets. Nexans addresses a series of market segments from energy, transport and telecom networks to shipbuilding, oil and gas, nuclear power, automotive, electronics, aeronautics, handling and automation. With an industrial presence in 39 countries and commercial activities worldwide, Nexans employs 23,500 people and had sales in 2008 of 6.8 billion Euros. Nexans is listed on NYSE Euronext Paris, compartment A. More information on [www.nexans.com](http://www.nexans.com)

#### **About Bruker HTS/Bruker Advanced Supercon:**

Bruker HTS GmbH is based near Frankfurt, Germany and is part of the Bruker Advanced Supercon division of Bruker Corporation (NASDAQ: BRKR). In addition to Bruker HTS, the Bruker Advanced Supercon business also includes Bruker EAS in Germany, Hydrostatic Extrusions Limited in Scotland, and Bruker Advanced Supercon, Inc. in the United States. Bruker HTS is a leading manufacturer of both 1G BSSCO and 2G YBCO HTS materials and devices, based on its broad HTS technology platform. Bruker HTS solutions enhance the reliability and efficiency of electrical power grids and large energy demanding applications. Its proprietary **SuperFast™** superconducting fault current limiter (SFCL) has the potential to enhance power grid reliability, and its HTS current lead products dramatically reduce electrical losses in large industrial and research magnets. Conductors and components made by Bruker HTS are being used to build a new generation of compact high power devices such as HTS motors, generators, cables and transformers, as well as high field magnets for medical and research applications. For more information: [www.advancedsupercon.com](http://www.advancedsupercon.com)

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