

## The 5<sup>th</sup> Braunschweig Superconductivity Seminar

June 25, 2010 (HE47). The 5th Braunschweig Superconductivity Seminar was held on June 23 and 24, 2010, in the historical city of Braunschweig, Germany. As in past few years, this “seminar” was really a national workshop organized by the Institute of High Voltage Technology and Power Systems, the Institute for Surface Technology, both of the Carolo-Wilhelmina Technical University of Braunschweig, and the “PerCoTech AG” company. The event was generously supported by the German utility company Vattenfall Europe Distribution GmbH, the Association for Electrical, Electronic & Information Technologies (VDE), the German Industrial Association “Superconductivity” (ivSupra), and by Siemens AG.

The purpose of this series of annual workshops has been and remains to enhance communication between electric utilities or authorities, who are potential users of superconducting apparatus, on one side, and the industrial manufacturers and research organizations, who are developing such apparatus, on the other. The workshop was attended by over 60 participants not only from Germany, but also from Austria and the Netherlands. Many of the attendees were electrical engineers from electric utilities and testing institutes.

The key technologies for superconducting application are always those of the superconducting material in the form of a suitable conductor and its cryocooling. Therefore several presentations which addressed this issue were held this year. These presentations showed the problem and possible solutions for new and already established cooling techniques.

The list of presentations, and the projected slides, part in German and part in English, can be found at: <http://www.htee.tu-bs.de/htee/supraleiterseminar/5BSSupraleiter.html>. Also the presentations of the past three years with some comments can be found at: <http://www.htee.tu-bs.de/htee/supraleiterseminar/supraleiterseminar.html>.

This year’s program included reports on progress, even highlighting some world records, in (coated) conductors and cables for power applications, their cryocooling and in selected applications, where progress has been tangible: fault current limiters, power cables and electrical machines such as power generators for hydroelectric plants and motors for ships. The point of view of electric utilities was presented in a talk from EON Avacon (Germany) under the characteristic title (translated from German) “Let’s Bet on the Proven (Technology): Conditions for Application of New Technologies in Utilities”. Indeed, it is essential for developers of new technologies, such as that of superconducting power devices and systems, to fully understand and appreciate the utilities point of view and their constraints imposed by requirements of highest reliability over time and reasonable profit. This understanding can spare enthusiasts of superconductivity in power systems a lot of frustration, and nurture the necessary long-term approach to the new technology insertion.

In the opinion of many participants the event was useful, quite successful and well organized. Figure 1 shows the group photo of participants. The following two figures provide snapshots from the meeting. The organizers intend a follow-up meeting to be held in June 2011.

Researchers and development engineers active in applied superconductivity are not necessarily familiar with the way of thinking, language of and the constraints faced by engineers in utility companies. However, such familiarity is a condition of good cooperation and ultimate success for both groups. Therefore, the workshop organizers would like to encourage all interested parties to attend the 2011 workshop with the aim to further eventual insertion of high-temperature superconductivity apparatus into electrical power systems.



**Fig. 1.** Group photo of participants of the 5th Seminar (June 23, 2010).



**Fig. 2.** Some attendees during a coffee break.



**Fig. 3.** Part of the attendees during the June 24<sup>th</sup> session.