## Hans Dachs (1927–2011)

Professor Dr Hans Dachs, one of the pioneers of neutron scattering and longtime head of the neutron scattering division at the Hahn-Meitner-Institut (HMI), died at the age of 84 in Passau on 14 November 2011.

Hans Dachs, who was born in Regensburg, started his scientific career at the Ludwigs-Maximillian-Universität München, obtaining a PhD in crystallography in 1956 under Professor Menzer. By 1957 the FRM1 'Atomei' had became operational, and to learn more about the potential of neutron scattering Hans Dachs extended his studies as a postdoctoral researcher at the Massachusetts Institute of Technology with Cliff Shull and then later at Brookhaven National Laboratory. Upon returning to Munich in 1960 Hans Dachs constructed a crystallography instrument. With this he intended to use neutrons to address scientific topics including magnetism and its relation to structure, as well as the role of hydrogen atoms, their positions and movement in crystals. His most significant results at this time were the first experimental evidence of a magnetic screw structure in manganite and the first determination of H-atom positions using the example of LiOH. These scientific questions and the possibilities of neutron instrumentation would inspire him for the rest of his life.

In 1967 Hans Dachs took over the chair as head of the Institute of Crystallography at the University of Tübingen. His responsibilities included a powder- and single-crystal diffractometer at the FR2 reactor in Karlsruhe. He supported these with laboratory activities in X-rays but also magnetic specific heat measured through linear magnetic birefringence. As he built up his group of students and young researchers it became increasingly clear that Hans Dachs was not only an excellent scientist but also an outstanding teacher.

At this time the German–French high-flux research reactor at the Institut Laue–Langevin (ILL) was built, and a new era in neutron scattering began with its entry into operation in 1971. Two years later, whilst on a sabbatical at the ILL gaining familiarity with the new developments, Hans Dachs was offered a professorship at the former HMI and the Technical University Berlin (TUB), which he accepted.

Hans Dachs started in 1974 when BER II was just being put into operation. He had by now built up a reputation for novel instrument concepts and was quickly able to put these into practice. He also set up a scientific program which he strengthened and realigned according to the possibilities in Berlin. As professor at the TUB, he attracted graduates and diploma students, rapidly enlarging his team, and the work at BER II became very successful. A large number of guests, Cliff Shull included, were invited from around the world, leading to many intensive and helpful discussions. Follow-up meetings in town were legendary, as they always took place in the pubs – chosen by Hans Dachs – of Kreuzberg, the center of the West Berlin alternative culture.

**Figure 1**
Hans Dachs (1927–2011).

Realizing the importance of dynamics on the microscopic scale Hans Dachs started to develop in the early 1980s a concept for the expansion and upgrading of BER II to provide the required fluxes. His plans also envisaged a new user center with international appeal, besides a cold neutron source, novel instrumentation and the appointment of a younger colleague. He convinced the state and federal government to back his project and, after a short construction period and somewhat longer approval process, the enlarged reactor with new instruments finally went into operation in 1991. Hans Dachs, who retired in 1989, could thereby lay the groundwork for the establishment of a user center for neutron scattering at the HMI in Berlin that not only had become attractive to the German and international user community, but could also stand out owing to its own excellent research: Hans Dachs is the master of neutron scattering in Berlin!

Beyond his work in physics Hans Dachs was widely read with diverse interests that he followed on his various trips. The collection of art, the cultures of strange countries, traveling to unusual and out of the way places – after suitably precise preparation! – and all of this with his characteristic love of adventure. Of course, not everything went according to plan – but then he could tell especially exciting stories. After his retirement Hans Dachs dealt with cataloging his sizable collections ready for exhibition. He did this so well that several exhibitions could be organized in Regensburg, his home town, to whom he donated all of his collections. Tragically, Hans Dachs could not witness the opening of the most recent exhibition from his collections, which happened on 14 December 2011.

Hans Dachs played an important part in the lives and careers of many of us. In spite of his large commitment and his heavy responsibility at the HMI and the TU Berlin, Hans Dachs always took time for his employees and students to give them advice and practical support at the start of their professional lives. He was tolerant and kind, and always perspicacious and precise when it came to science. When he was convinced by something, he stood up for it, even if this meant putting his science aside, as he did for the reconstruction of the reactor.

Science, the Hahn-Meitner-Institut, now the Helmholtz-Zentrum Berlin, and neutron scatters will never forget Hans Dachs.

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