

The 78th

ICYS

Special Seminar



Prof. Dr. Jochen Wosnitza

Director

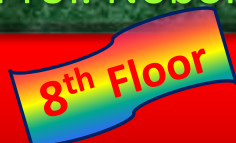
Hochfeld-Magnetlabor Dresden (HLD), Forschungszentrum
Dresden-Rossendorf, D-01314 Dresden, Germany

Title: The Dresden Magnetic Field Laboratory – Recent Research Results

The Dresden High Magnetic Field Laboratory (*Hochfeld-Magnetlabor Dresden*, HLD), situated at the outskirts of Dresden, has opened its doors for external users in 2007. Since then, an increasing number of scientists from all over the world applied for magnet time and had, after approval, the possibility to conduct their high-field research in the pulsed fields at the HLD. A variety of magnets with pulsed fields up to 70 T are available and a European record field of 87.2 T has been reached. Numerous experimental methods are available allowing to measure electrical transport, magnetization, magnetostriction, ultrasound, ESR, and even NMR, often with very high resolution. As a unique feature, a free-electron-laser facility next door allows high-brilliance radiation to be fed into the pulsed field cells of the HLD, thus making possible high-field magneto-optical experiments in the range 3-250 μm . In-house research of the HLD focuses on electronic properties of strongly correlated materials at high magnetic fields. Besides introducing some highlights of the HLD experimental infrastructure, some recent scientific research results will be presented. This includes e.g. the detection of Shubnikov-de Haas oscillations in electron-doped high-temperature superconductors that allowed to unravel a drastic change of the Fermi-surface topology upon doping. Furthermore, pulsed-field experiments at the HLD allowed to observe the field-induced conductance switching in single-walled carbon nanotubes.

Chair: Prof. Noboru Miura, Managing Director, ICYS, NIMS

Venue:



Room #811, Central bldg., SENGEN Site

Date: **September 21st, Tuesday**

Time: **2:00-2:45 pm**

Contact: International Center for Young Scientists (ICYS), Nakajima (ext 6075)