PAUL SCHERRER INSTITUT

PSI

GFA - PSD Accelerator Seminar

Superconducting materials and applications R&D at Institute for Technical Physics at KIT

Monday, 28 January 2019, 16.00 h, WBGB/019

Prof. Mathias Noe, Institute for Technical Physics, KIT

Founded more than 40 years ago the Institute of Technical Physics (ITEP) at Karlsruhe Institute of Technology (KIT) understands itself as a national and international competence centre for fusion, superconductivity, and cryogenic technologies. Our activities in superconductivity focus on the R&D key areas of superconducting materials, superconducting power applications and superconducting magnet technology. The work of ITEP is embedded in the "Fusion," "Storage Systems and Cross-linked Infrastructures," and "Matter and the Universe" long-term programmes of the Karlsruhe Institute of Technology (KIT) and Helmholtz Association of National Research Centres.
The presentation will give firstly an overview on the main objectives and key R&D areas of ITEP before details on present projects in each field are presented. R&D spans from chemical processing of YBCO coated conductors to high current conductor concepts and first-of-a-kind demonstrators and prototypes for power applications and future magnet systems. This is accompanied by a strong expertise in modeling superconductors and integrating cryogenic know-how. As an example, details are given on the Roebel conductor development for future accelerator magnets with magnetic fields around 20 T and more. Finally, an overview on important infrastructure and cooperation is presented.

For more details, contact Marco Calvi, 5802