

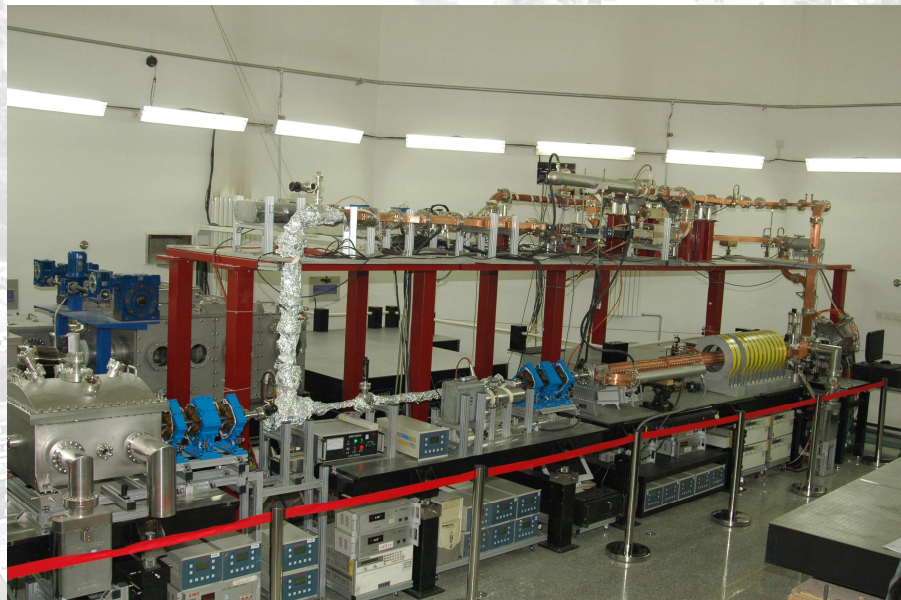
# GFA and SwissFEL Accelerator Seminar

## Accelerator R&D Projects at Tsinghua University

Monday, 12 September 2011, 16.00 h, WBGB/019

**Prof. Chuanxiang Tang**

Department of Engineering Physics,  
Tsinghua University, Beijing, China



The Tsinghua Thomson Scattering X-ray Source (TTX) and the Compact Pulse Hadron Source (CPHS) are two projects at Tsinghua University.

Hard x-ray sources, based on Thomson scattering (or inverse Compton scattering) between electron beams and laser pulses, can generate monochromatic, tunable, ultra-fast and high peak brightness X-rays. Thomson scattering X-ray source facilities are compact compared to SR and X-ray FELs, and hence more suitable for a university. TTX is a hard X-ray source based on Thomson scattering between 45 MeV electron bunches and 20 TW 800 nm laser pulses. The technologies

developed for TTX will be introduced, such as photocathode rf gun and beam diagnostics. The status of TTX and experimental results will be presented.

CPHS is a compact pulsed neutron source with a 13 MeV proton beam hitting a Be target. The 13 MeV proton linac consists of an ECR proton source, RFQ and DTL. The ECR source is in the commissioning stage and the RFQ is under construction. The design and technologies of CPHS, together with future plans will be presented.

We are also developing a C-band photocathode rf gun system for MeV Ultra-fast Electron Diffraction (UED). The design details of the C-band rf gun will be presented, together with our MeV UED experiments using a S-band rf gun.

Some other accelerator related activities at Tsinghua University, such as low energy electron linacs for cargo inspection and medical applications, will also be mentioned.