# HZDR COLLOQUIUM

Datum: **08. Oktober 2015**
Zeit: **13:30 Uhr**
Ort: **Kleiner Hörsaal (Gebäude 620), HZDR**

HELMHOLTZ ZENTRUM DRESDEN ROSSENDORF

# PROGRESS TOWARDS A 10 PW LASER FACILITY AT SHANGHAI


## PROF. RUXIN LI

State Key Laboratory of High Field Laser Physics,
Shanghai Institute of Optics and Fine Mechanics (SIOM),
Chinese Academy of Sciences (CAS), Shanghai 201800, China



**ABSTRACT** The talk will present recent progress towards a 10 PW laser facility at SIOM Shanghai based on the chirped pulse amplification (CPA) and optical parametric chirped pulse amplification (OPCPA) technologies. We have demonstrated a high gain chirped pulse amplifier based on a 150 mm in diameter Ti:sapphire with the highest output pulse energy of 192.3 J and a pump-laser efficiency of 50.4 %. The amplified chirped pulse has a bandwidth of 50 nm at 800 nm central wavelength. With the grating compressor of 72 % efficiency and the 27 fs long compressed pulse obtained at lower energy level, this Ti:sapphire amplifier could support a compressed laser pulse of 5.13 PW peak power. In the meantime, we have demonstrated a 1 PW laser pulse output by using a LBO crystal based optical parametric chirped pulse amplifier as the final booster amplifier before the pulse compression. Prof. Li will also talk about some applications of PW lasers regarding electron acceleration.


We look forward to seeing you.

Prof. Dr. Dr. h. c. Roland Sauerbrey
HZDR Scientific Director