Fritz-Haber-Institut der Max-Planck-Gesellschaft

Physikalische Chemie — Direktor: Prof. Dr. Martin Wolf

Informal Seminar:

Thursday, April 19, 2018, at 10:00 a.m.

Dr. Robert Riedel CLASS 5 PHOTONICS GmbH, Hamburg.

High Power Femtosecond Lasers – – The Next Generation

PC Seminar Room **G2.06**, Building G, Faradayweg 4. S. King

Abstract:

New applications in bio-imaging, material processing and time-resolved molecular spectroscopy require new high-power Laser sources in the near- and mid-infrared spectral regions. High power femtosecond Lasers based on optical parametric chirped-pulse amplifiers (OPCPA) pumped by recent material processing lasers offer average powers up to 100 W and support pulse durations down to the few-cycle regime.

In my presentation, I will give an overview about different laser architectures based on OPCPA. The high single-pass gain and low absorption of the nonlinear amplifier crystals offer a robust set-up on a compact footprint. In addition, the broad amplification bandwidth and our white-light generation enable tunable Laser sources in wavelength regions between 350 nm and 3500 nm. We reduce complexity and increase stability to provide easy-to-use femtosecond lasers and to enable our customers to target new frontiers in ultrafast applications.