



PRESS RELEASE

Röntgen Prize 2006 for Dr. Thomas Udem

Dr. Udem, a research scientist at the Max Planck Institute of Quantum Optics, Garching (near Munich), has received this year's Röntgen Prize from Justus Liebig University, Gießen, in recognition of his "pioneering contributions to realisation of optical frequency comb techniques by means of femtosecond lasers". For the development of this new measuring method Prof. Theodor W. Hänsch, Director at MPQ and head of the Laser Spectroscopy Division, was awarded the Nobel Prize in physics in 2005.

Dr. Udem studied physics at Justus Liebig University, Gießen, where he took his diploma degree in 1993 after a one-year leave of absence at the University of Washington in Seattle. In March 1994 he started work in Prof. Hänsch's division on his PhD thesis entitled "Phase-coherent optical frequency measurement on the hydrogen atom. Determination of the Rydberg constant and the 1S Lamb shift.", which he completed in 1997.

These measurements constitute a test of the theory of quantum electrodynamics, which describes the interaction between light and matter. To increase the measuring accuracy and come even closer to the precision of the theoretical prediction, Prof. Theodor W. Hänsch, Thomas Udem and Ronald Holzwarth devised the so-called frequency comb technique at the end of the nineties, which for the first time allowed optical frequencies to be directly measured. Instead of the frequency being derived from the wavelength of the light this technique exactly determined the number of oscillations per second.

Dr. Udem is co-recipient of the Philip Morris Research Prize 1998. In July 2005 he was awarded the endowment prize of the Munich University Society. The Röntgen Prize from Justus Liebig University, Gießen, which is endowed with 7500 euros, will be presented at the official academic ceremony in Gießen on 24 November 2006.

Further information:

Dr. Thomas Udem

Laser Spectroscopy Division
Max Planck Institute of Quantum Optics
Hans-Kopfermann-Straße 1
85748 Garching
Telephone: +49 - 89 / 32905 282
e-mail: thomas.udem@mpq.mpg.de

Dr. Olivia Meyer-Streng

Press & Public Relations Office
Max Planck Institute of Quantum Optics,
Hans-Kopfermann-Straße 1
85748 Garching
Telephone: +49 - 89 / 32905 213
e-Mail: olivia.meyer-streng@mpq.mpg.de