MAX-PLANCK-INSTITUTE
OF QUANTUM OPTICS

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Press Release

Dr. Nathalie Picqué receives the Coblentz Award

The Coblentz Society has elected Dr. Nathalie Picqué as this year's recipient of the Coblentz Award. Dr. Picqué is currently on long-term leave at the Max-Planck-Institute of Quantum Optics (Garching, near Munich) and the Ludwig-Maximilians-Universität Munich, where she works in the Laser Spectroscopy Division of Professor Theodor W. Hänsch. The Coblentz Society is a non-profit organization founded in 1954 and a technical affiliate of the Society for Applied Spectroscopy. It aims at fostering the understanding and application of vibrational spectroscopy. The Coblentz Award, first awarded in 1964, is presented annually to an outstanding young molecular spectroscopist under the age of 40.

Dr. Nathalie Picqué was born in France in 1973. She obtained her doctoral degree in 1998 from the Université de Paris-Sud (Orsay, France). After a post-doctoral stay at the European Laboratory for Nonlinear Spectroscopy (Florence, Italy), she was appointed as a permanent research scientist with the Centre National de la Recherche Scientifique (CNRS) in 2000. Starting in 2005, she became a scientific director at the Laboratoire de Photophysique Moléculaire (Orsay, France).

Dr. Picqué's research focus lies in molecular and laser physics, in particular she has done much work developing ways to use laser frequency combs in Fourier transform spectroscopy. Experiments in Picqué's team have demonstrated that frequency combs are dramatically improving the resolution and recording speed of Fourier spectrometers for broad spectral bandwidth linear absorption spectroscopy. One of the projects carried out at the MPQ has been the combination of cavity enhancement and dual-comb spectroscopy for molecular trace gas analysis. In more recent experiments, nonlinear interactions, such as two-photon excitation or stimulated Raman transitions, are harnessed thanks to the intense ultrashort laser pulses produced by the frequency comb generators. The resulting novel concepts of highly-multiplexed high-resolution nonlinear spectro-imaging with ultra-rapid acquisition times might evolve into powerful tools for e.g. nonlinear multidimensional microscopy.

Dr. Picqué has already received the 2007 Bronze Medal of the CNRS (best young scientist of the year in the field "Optics and Lasers, Atomic and Molecular Physics, Hot Plasmas" in France), and the 2008 Jean Jerphagnon Prize. In 2010 she was elected for the Beller Lectureship Award from the American Physical Society. The Coblentz award, which includes a certificate and a prize money, will be presented to Dr. Picqué on the occasion of the 68th International Symposium on Molecular Spectroscopy in Columbus (Ohio, USA) on June 17th, 2013.

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