



## Press Release

17 June 2011

### ERC grant awarded to Nobel laureate Prof. T. Hänsch

**Professor Theodor W. Hänsch, Nobel Prize winning physicist, has been awarded an ERC Advanced Grant. He and his team will shortly start this project on new applications of frequency combs at the Ludwig-Maximilians-Universität München, Germany.**

Professor Hänsch received the 2005 Nobel Prize<sup>1</sup> for his many contributions to laser-based precision spectroscopy, including the so-called "optical frequency comb" technique, which has revolutionised the field and is the basis for this ERC-funded project. A laser frequency comb makes it possible to measure the frequency of any laser source with a precision that enables stringent tests of the fundamental laws of physics. This technique also paves the way for the creation of all-optical clocks and improved satellite-based navigation systems. Frequency combs are currently used by hundreds of laboratories worldwide.

With the ERC project, Professor Hänsch will explore a new application of frequency combs to molecular spectroscopy, which is used to detect and determine the composition of molecular samples in laboratories. It is also employed in "real life situations" for instance to analyse gases in the atmosphere, or to identify explosive or hazardous materials. These new instruments will improve the precision and sensitivity of molecular spectroscopy, but also make the recording of a spectrum much quicker, so that it can be used to study short-lived molecules or the details of chemical reactions in real time.

For more than ten years, Professor Hänsch was a professor of Physics at Stanford University, USA, and during this time also received prizes such as the Comstock Prize in Physics of the US National Academy of Sciences. Since 1986, he pursues his career in Germany as a Professor of Experimental Physics at the Ludwig-Maximilians Universität in Munich and a Director at the Max Planck Institute for Quantum Optics in Garching. Results from his research team have been listed among the "Top Ten" of Physics World in 2010.

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<sup>1</sup> He shared the 2005 Nobel Prize in Physics with John L. Hall and Roy J. Glauber.



### **Background**

Prof. Hänsch was selected in the European Research Council's latest competition for "Advanced Grants" and recently signed his grant agreement. His grant amounts to EUR 2.39 million for 5 years. The ERC Advanced Grant is a funding scheme targeted to established leading researchers.

Set up in 2007 by the EU as part of the 7<sup>th</sup> Research Framework Programme, the ERC is the first pan-European funding organisation for frontier research. It aims to stimulate scientific excellence in Europe by encouraging competition for funding between the very best, creative researchers of any nationality and age. In addition to funding established research leaders ('ERC Advanced Grants'), the ERC also supports younger, early-career researchers ('ERC Starting Grants'). The ERC strives to attract top researchers from anywhere in the world to lead or be involved in research projects in Europe.

### **Links**

- [Prof. Hänsch's project on CORDIS](#)
- [Prof. Hänsch's laboratory, Ludwig-Maximilians-Universität München](#)
- [ERC website](#)
- [ERC Striking projects](#)

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