Theodor Wolfgang Hänsch

Director of the Max-Planck-Institut für Quantenoptik.
Physics Professor at the Ludwig-Maximillians Universität, Munich.

Theodor Wolfgang Hänsch was born in Heidelberg in 1941, and has been the Director of Munich's Max-Planck-Institut für Quantenoptik since 1985, as well as Physics professor at the Ludwig-Maximillians Universität and part-time Physics Professor at the University of Florence. Between 1970 and 1986 he has done some important research work at Stanford University.

He has published works of exceptional value regarding techniques of non-linear high resolution atomic spectroscopy called "Two-photon spectroscopy without the Doppler Effect" which has made it possible to obtain measurements ten times more accurate than with previous techniques. These techniques are very useful in solving widely diverse scientific and technological problems.

Professor Theodor Hänsch has worked on ever-improved standard references for frequency measurements. In order to compare an unknown period of light with the reference, they have developed the frequency comb technique. This gives a sequence of exactly separated frequencies and a method to set this measuring rod against an unknown frequency. Thus one obtains an extremely accurate number for the unknown period. This enables to make extremely high precision spectroscopic measurements and guarantees a very highly improved accuracy. For this, Professor Hänsch was awarded the 2005 Nobel Prize in Physics with Professor Glauber and Professor John Hall.

Prof. Häensch has been awarded the Otto Hahn Prize for Chemistry and Physics and his Research Group has been one of the four Research Groups to be picked to receive the 2001 “Deutschern Zukunftspreis” assigned by the Federal President in the Technical Innovation field. Furthermore he is a member of many prestigious Academies such as the American Academy of Arts and Science and the National Academy of Sciences. He has been awarded numerous prizes worldwide including the Italgas Prize for Research and Innovation, the Einstein Medal for Laser Science, the King Faisal International Prize for Science, the Phillips Morris Research Prize and the EPS Quantum Electronic and Optics Prize.