Laudation of Professor Stefan W. Hell

Professor Stefan W. Hell is the **world's leading scientist** in **nanoscopy** and **high-resolution biomedical imaging**. He is the **recipient of the 2014 Nobel-prize in chemistry** for his work in which the inherent optical microscopic resolution limit was surpassed by the use of fluorescent molecules and a special illumination technique he developed.

Stefan Walter Hell was born on the 23rd of December, 1962 in **Arad**. In 1978, together with his family, he emigrated from Romania and settled in Ludwigshafen, Germany. He enrolled at the University of Heidelberg in 1981 and left with his PhD in physics in 1990, for studying confocal microscopy. After a brief period of independent inventor work, during which he developed ideas for improving the resolution of the confocal microscope, he joined the European Molecular Biology Laboratory in Heidelberg between 1991 and 1993. Between 1993 and 1996 he worked as a **senior researcher at the University of Turku, Finland**. It was here where he laid down the fundations of what is to be known as **STimulated Emission Depletion or STED microscopy**. From 1993 to 1994 Stefan W. Hell was also for 6 months a **visiting scientist at the University of Oxford in England**, where he had important encounters with **Professor George Radda, prior winner of the Semmelweis Budapest Award**. In 1997 he was appointed to the Max Planck Institute for Biophysical Chemistry in Göttingen, where he has built up his current research group dedicated to sub-diffraction-resolution microscopy. In 2002, following his appointment as a director, he established the department of NanoBiophotonics.

Professor Hell is a scientific member of the Max Planck Society, an honorary professor of experimental physics at the University of Göttingen and adjunct professor of physics at the University of Heidelberg. Since 2003 he has led the High Resolution Optical Microscopy division at the German Cancer Research Center (DKFZ) in Heidelberg. He is a member of the board of directors of the Göttingen Laser Laboratory as well as a member of the Academy of Sciences of Göttingen and Heidelberg.

Professor Hell is credited for having conceived, validated and applied the **first viable concept for breaking Abbe's diffraction-limited resolution barrier in a light-focusing microscope, known as the STED microscope.** STED microscopy allows an order of magnitude greater detailed observation in living cells and makes structures visible that are on the order of a few tens of nanometers. With this, **he paved the way towards understanding the living cell at the molecular scale**.

Stefan W. Hell is the author of **390 publications** that received more than **26.000 citations**. His **Hirsch-index is 83**. He has received several awards, including the Prize of the International Commission in Optics (2000), the Carl Zeiss Research Award (2002), the "Innovation Award of the German Federal President" (2006), the Julius Springer Award for Applied Physics (2007), Leibniz Prize (2008), the Lower Saxony State Award (2008), the Otto-Hahn-Prize in Physics (2009), the Ernst Hellmut Vits Prize (2010), the Hansen Family Award (2011), the Körber European Science Prize (2011), and the Gothenburg Lise Meitner Prize (2010/2011). **In 2014, together with the American scientists William E. Moerner and Eric Betzig, he was awarded the Nobel-prize in chemistry**.

Considering that Semmelweis University, the leading biomedical university of Hungary, is on the verge of venturing into super-resolution imaging, it is of utmost pleasure to present the university's highest prize to Professor Stefan W. Hell.