

Max Planck Institute for Biophysical Chemistry Göttingen, Germany



MAX-PLANCK-GESELLSCHAFT

Press Release

September 14, 2006

Stefan Hell is nominated for the Innovation Award of the Federal President of Germany: "Light microscopy with unprecedented resolution"

Prof. Stefan Hell, director at the Max Planck Institute for Biophysical Chemistry, has been nominated for the Innovation Award 2006, conferred by the Federal President of Germany. The announcement was made on September 14th by the Chief of the Office of the Federal President, Dr. Gert Haller, at a press conference. Hell was recommended for the award for his groundbreaking ideas for the improvement of light microscopy resolution. In total, four projects have been nominated for the prize. The winner will be announced on the 23rd of November in Berlin.



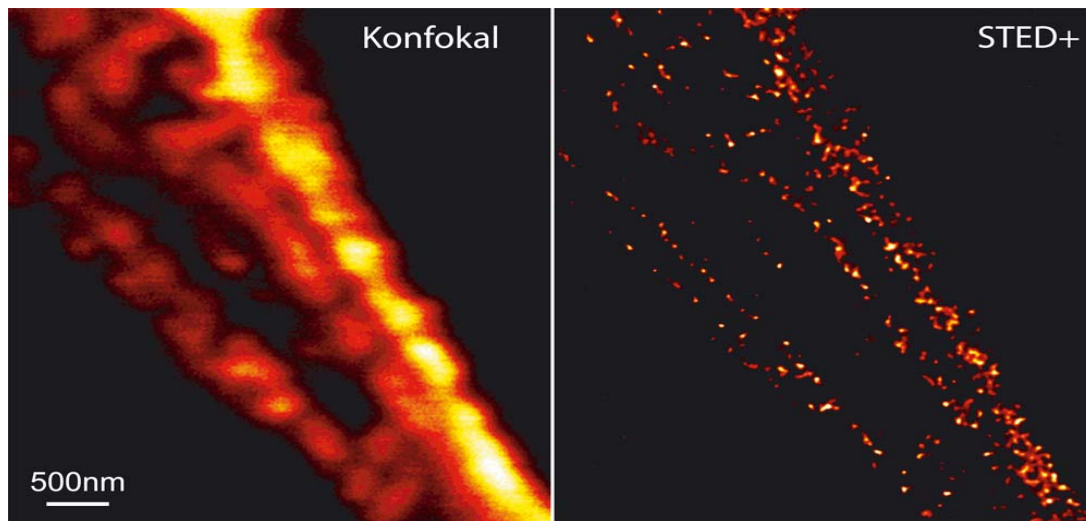
Prof. Stefan W. Hell

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Stefan Hell was unwilling to accept that the resolution of a lens-based light microscope was limited by physical laws. With new and unconventional ideas, he has turned accepted textbook knowledge on its head and revolutionized the possibilities of fluorescence microscopy. With "STED microscopy," developed by Dr. Hell, details within cells can be seen which remain hidden by even the best-resolving conventional microscopes.

The jury of the Federal President of Germany has nominated his innovation as one of four projects to be selected for the "10th German Innovation Award." The award, first conferred in 1997, consists of 250,000 Euros in prize money and is considered one of the most prestigious conferred for science and innovation within Germany. The award is more

than a scientific prize, however, not only identifying a project that is of high scientific value, but one which is mature for commercial markets with concrete applications.



A look at the inside of cells becomes sharper: Both figures above show the filaments in a human nerve cell; left with a common confocal microscope, right with a STED microscope plus mathematical deconvolution. The resolution of the STED microscope is better by more than an order of magnitude. *Source: MPI Biophysical Chemistry*

This is the case with STED microscopy. “Leica Microsystems, based in Mannheim, Germany, has announced that they will bring the STED microscope to the market in 2007,” says Hell. Because it will be the first commercial microscope in many years with substantially higher resolution, he adds: “It shouldn’t be difficult to sell.” The value of the instrument is not measured by the sales price, however. The substantially clearer images of details in cell interiors will likely lead to new discoveries in medical research, enabling related spin-offs: new forms of therapy, new medicines, and the associated value of these further discoveries. “This market doesn’t only have another order of magnitude, but a human dimension,” remarks Hell.

Born in 1962, Stefan Hell studied Physics in Heidelberg. He had “fantastic” teachers, from whom he acquired the enthusiasm to become a physicist, engage in research and strive to understand of the workings of nature. After attaining his doctoral degree in Heidelberg in 1990, he initially pursued his ideas as a “freelance inventor.” After a time as a postdoc at the EMBL (European Molecular Biology Laboratory) in Heidelberg, he traveled to the university in Turku, Finland, in 1993, where he worked as a group leader. There he developed the principles of STED microscopy. In 1996 Hell began as the principle investigator of a junior research group at the Max Planck Institute for Biophysical Chemistry in Göttingen, where he has lead the Department of NanoBiophotonics since 2002. Hell is a scientific member of the Max Planck Society, and since 2004, an honorary professor for experimental physics at the Georg-August University in Göttingen. He has received numerous awards: the Prize of the International Commission for Optics (ICO), among others.

In 1999 two other directors at the Max Planck Institute for Biophysical Chemistry were nominated for this award: Peter Gruss and Herbert Jäckle. For their project “Microbiological Methods for Innovative Therapy” they ultimately received the prize.



These and more pictures, to be used also for News reports, can be found at
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with an interview (in German), a short description of the method (in German) and more photographs.

www.mpibpc.mpg.de/english/aktuell/pr/

see Press Releases of April 14, and August 10, 2006.

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