Leopoldina
Nationale Akademie
der Wissenschaften

Curriculum Vitae Professor Dr Stefan W. Hell

Photo: Bernd Schuller, Max-Planck-Institut für biophysikalische Chemie

Name: **Stefan W. Hell**
Date of birth: **23 December 1962**

Research Priorities: optical microscopy beyond Abbe's diffraction limit

Stefan Hell is a German physicist. He has developed the first microscopic method that allows for resolutions far below the wavelength of light to be achieved with focused light. In 2014, he received the Nobel Prize in Chemistry together with Eric Betzig and William E. Moerner “for the development of super-resolved fluorescence microscopy”.

Academic and Professional Career

since 2004	Honorary Professor of experimental physics, Georg-August-Universität Göttingen, Göttingen, Germany
since 2003	Head, Department of Optical Nanoscopy, German Cancer Research Center (DKFZ), Heidelberg, Germany
since 2003	Honorary Professor, Department of Physics and Astronomy, Heidelberg University, Heidelberg, Germany
since 2002	Scientific Member, Director, and Leader, Department of NanoBiophotonics, Max Planck Institute for Multidisciplinary Sciences (formerly MPI for Biophysical Chemistry), Göttingen, Germany
1997 - 2002	Group Leader, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany
1996	Habilitation in physics, Heidelberg University (extern), Heidelberg, Germany
1993 - 1996	Principal Scientist, Department of Medical Physics, University of Turku (UTU), Turku, Finland

1993 - 1994	Visiting Scientist, Scanning Optical Microscopy Group, Department Engineering Science, University of Oxford, Oxford, UK
1991 - 1993	Postdoctoral Researcher, Light Microscopy Group, European Molecular Biology Laboratory (EMBL), Heidelberg, Germany
1990	Freelance Inventor
1990	Doctorate in Physics, Heidelberg University, Heidelberg, Germany
1981 - 1987	Study of Physics, Heidelberg University, Heidelberg, Germany

Functions in Scientific Societies and Committees

since 2020	Member, Senate, Max Planck Society (MPG), Munich, Germany
since 2009	Speaker, Research Center Molecular Physiology of the Brain (CMPB), German Research Foundation (DFG), Germany
since 2007	Member, Board of Trustees, Experimental Laboratory for Young People (X-LAB), Göttingen, Germany
since 2007	Member, Bord of Trustees, Stiftung Zukunfts- und Innovationsfonds Niedersachsen, Hanover, Germany
since 2005	Secretary, International Society on Optics Within Life Sciences (OWLS)
since 2003	Associated Member, European Neuroscience Institute (ENI), Göttingen, Germany
since 2003	Member, Board of Directors, Laser Laboratorium Göttingen, Göttingen, Germany
since 2002	Sientific Member, Biomedical-Chemical-Physical-Technical Section, MPG, Munich, Germany

Honours and Awarded Memberships

2022	Member, Order Pour le mérite
2022	Werner von Siemens Ring, Stiftung Werner-von-Siemens-Ring
2019	Member, Pontifical Academy of Sciences (PAS), Vatican City
2019	Honorary Member, International Union of Physiological Sciences (IUPS)
2016	Member, German National Academy of Sciences Leopoldina, Germany
2016	Markgräfler Gutedelpreis, Markgräfler Gutedelgesellschaft, Müllheim, Germany
2016	Wilhelm Exner Medal, Wilhelm Exner Foundation of the Austrian Trade Association, Vienna, Austria
2016	Member, acatech – National Academy of Science and Engineering, Germany

2016	Semmelweis Budapest Award, Semmelweis University, Budapest, Hungary
2015	Order of Merit, State of Baden-Württemberg, Germany
2015	Glenn T. Seaborg Medal, University of California, Los Angeles (UCLA), USA
2014	Nobel Prize in Chemistry (shared with Eric Betzig and William E. Moerner), Royal Swedish Academy of Sciences (KVA), Sweden
2014	Kavli Prize in Nanoscience (shared with Thomas W. Ebbesen and Sir John B. Pendry), Kavli Foundation, Los Angeles, USA
2014	Carus Prize, City of Schweinfurt, Germany
2013	Carus Medal, German National Academy of Sciences Leopoldina, Germany
2013	Honorary Doctorate, University POLITEHNICA of Bucharest (UPB), Bucharest, Romania
2012	Honorary Member, The Romanian Academy, Romania
2012	Science Prize, Fritz Behrens Foundation, Hanover, Germany
2011	Honorary Doctorate, Western University “Vasile Goldiş” (UVVG), Arad, Romania
2011	Meyenburg-Preis, Wilhelm und Maria Meyenburg-Stiftung, Heidelberg, Germany
2011	Gothenburg Lise Meitner Award, Fysicum, Gothenburg, Sweden
2011	Körber European Science Prize, Körber Foundation, Hamburg, Germany
2011	Hansen Family Award, Bayer Foundation, Leverkusen, Germany
2010	Ernst Hellmut Vits Preis, Universitätsgesellschaft Münster, Germany
2009	Corresponding Member, Heidelberger Akademie der Wissenschaften (HAdW), Germany
2009	Otto Hahn Prize for Physics, Gesellschaft Deutscher Chemiker (GDCh), Germany
2009	Honorary Doctorate, UTU, Turku, Finland
2008	State Award, State of Lower Saxony, Germany
2008	Gottfried Wilhelm Leibniz Prize, DFG, Germany
2007	Member, Göttingen Academy of Sciences and Humanities, Germany
2007	Julius Springer Prize for Applied Physics, Springer Publishing Journal “Applied Physics A and B”, Heidelberg, Germany
2007	Cozzarelli-Preis, Journal “Proceedings of the National Academy of Science”, Washington D.C., USA
2006	Deutscher Zukunftspreis, The Federal President's Award for Technology and Innovation, Germany

2004	Gottlieb Daimler and Karl Benz Prize, Berlin-Brandenburg Academy of Sciences and Humanities, Germany
2002	Karl Heinz Beckurts-Preis, Karl Heinz Beckurts Stiftung, Zeuthen, Germany
2002	Berthold Leibinger Innovationspreis, Co-Recipient Third Prize, Berthold Leibinger Stiftung, Ditzingen, Germany
2001	Helmholtz Prize, Co-Recipient, Helmholtz Fonds, Braunschweig, Germany
2000	ICO Prize, International Commission for Optics (ICO), Palaiseau, France

Research Priorities

Stefan Hell is a German physicist. He has developed the first microscopic method that allows for resolutions far below the wavelength of light to be achieved with focused light. In 2014, he received the Nobel Prize in Chemistry together with Eric Betzig and William E. Moerner “for the development of super-resolved fluorescence microscopy”.

His discovery is of great relevance for biomedical research because light microscopy is the only known method for capturing molecules' spatial organisation and dynamics in a living cell and tissue. Stefan Hell describes his goal as “making the finest details visible down to the molecular scale”.

Stefan Hell worked at the European Molecular Biology Laboratory in Heidelberg and at the University of Turku in Finland on the question of achieving light microscopic resolutions in the nanometre range. Previously, it was assumed that the resolution of these microscopes was limited to half the wavelength of light (200 to 400 nanometres). Similar objects that were closer together can no longer be distinguished in the image. With the development of so-called “Stimulated Emission Depletion”, or STED microscopy for short, Hell refuted this assumption.