

# CURRICULUM VITAE

Franz J. Giessibl

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Date of birth: May 27, 1962;

Nationality: German

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## • CURRENT POSITION

2006 – Chair (Full Professor) at Institute of Physics, University of Regensburg, Germany

## • PROFESSIONAL AWARDS

2024 NIMS Award by National Institute for Materials Science Japan  
2024 Heinrich-Rohrer Grand Medal by the Surface Science Society of Japan  
2023 Fellow of the American Physical Society  
2023 Innovation in Materials Characterization Award, Materials Research Society, USA  
2016 Feynman Prize in Nanotechnology (Experimental Category) by Foresight Institute, USA  
2015 Rudolf-Jaeckel Prize of the German Vacuum Society, Germany  
2014 Joseph F. Keithley Award of the American Physical Society, USA  
2009 Karl Heinz Beckurts-Prize, Germany  
2001 Rudolf-Kaiser-Prize, Germany  
2000 German Nanoscience Prize, Germany  
1994 R&D 100 Award (jointly with Brian Trafas), USA

## • HONORS

2025 Member of the European Academy for Sciences and Art  
2024 International Fellow of the Japanese Surface and Vacuum Science Society  
2023 Fellow of the American Physical Society

## • MAJOR INVENTIONS

1996, 2011 qPlus Sensor, family of patents in Germany, USA and China, currently utilized by seven manufacturers of AFMs in Germany, Sweden, USA, Japan, South Korea and China

## • ACADEMIC HISTORY

2001 Habilitation (venia legendi), Fakultät Physik, Universität Augsburg, Germany  
1992 PhD (Dr. rer. nat.)  
Faculty of Physics, Ludwig-Maximilians-Universität München, Germany  
1988 Master (Diplom-Physiker Univ.)  
Department of Physics, Technische Universität München, Germany  
1986-1987 Exchange student, Eidgenössische Technische Hochschule Zürich, Switzerland  
1981-1982 Prediploma in precision engineering at Munich University of Applied Sciences

## • EMPLOYMENT HISTORY

2005 Offers for Chaired Professorships at Universities of Bristol (UK) and Regensburg (D)  
1998 – 2021 Board Member, Nanosurf AG, Liestal, CH  
1996 – 2006 Permanent senior researcher and lecturer at Institute for Experimental Physics, University of Augsburg, Germany  
1995 – 1996 Senior Associate, McKinsey & Company, Munich office, Germany

1992 – 1995 Senior Scientist, Director of Vacuum Products, Park Scientific Instruments, USA  
 1992 Postdoctoral Fellow at IBM Research Group Munich  
 1988 – 1991 PhD Student at IBM Research Munich, advisor: Nobel Laureate Gerd Binnig  
 1987 – 1988 Diploma student with Gerhard Abstreiter, TU Munich

#### • **SCHOLARSHIPS AND FELLOWSHIPS**

2015–2016 Fellowship supporting a sabbatical at University of Maryland / NIST Gaithersburg  
 1992–1992 Postdoctoral Fellowship by International Business Machines (IBM) Corporation  
 1988–1991 Fellowship by International Business Machines (IBM) Corporation for PhD studies  
 1985–1986 Karolina-Ruedi-Fellowship at Federal Institute of Technology, Zurich, Switzerland

#### • **SPECIAL LECTURES (SELECTION)**

2010 Colloquium Ehrenfestii (Oct 27 2010), Leiden, Netherlands  
 2013 Zernike Colloquium (Oct 3 2013), Groningen, Netherlands  
 2022 Les Houches Summerschool (Aug 7-15 2022), New mechanics, Les Houches, France

#### • **ORGANISATION OF SCIENTIFIC MEETINGS**

1998 –2013 Member of Steering Committee of “International Conference of Noncontact-Atomic Force Microscopy (NCAFM)”, held annually in Europe, Americas and Asia  
 1998 - Member Program Committee of NCAFM, held annually in EU, Americas and Asia  
 2015 - Member Program Committee International Conference Scanning Probe Spectroscopy  
 2018 - Member international advisory board International Symposium on Surface Science Japan  
 2018 - Member of program committee of ICN+T  
 2019 Chairman and organizer of 21<sup>st</sup> International Conference of Noncontact-Atomic Force Microscopy in Regensburg  
 2019 - Member Program Committee Workshop on Novel Materials and Superconductivity  
 2021 Scientific Committee member Turkish Physical Society Annual Meeting  
 2023 Organizer of Focus Session “Scanning Probe Microscopy with Quartz Sensors” with 6 invited talks and four approx. 3 h sessions at spring meeting of German Physical Society meeting in Dresden

#### • **INSTITUTIONAL RESPONSIBILITIES**

2006 – Faculty member, University of Regensburg, Germany  
 2007 – 2015 Head of Examination and Recruiting Committee for Bachelor and Master studies in Physics, University of Regensburg, Germany  
 2009, 2011 Head of Faculty Appointment Committee Chair in Physics, University of Regensburg,  
 2009 – Member of a PhD Examination Committee, University of Regensburg, Germany  
 2016 – 2020 Coordinator of State of Bavaria Teacher Examination Board at UR  
 2017 Evaluation Panel Assoc. Directors Institute for Basic Science Seoul, Korea  
 2022 – Member Advisory Board, Center for Quantum Nanoscience, Ewha Seoul, Korea

#### • **REVIEWING ACTIVITIES**

2002 External PhD Examiner, University of Linköping, Sweden  
 2005 External PhD Examiner, University of Aarhus, Denmark  
 2010 Scientific Advisory Board, Faculty Appointment, Osaka University, Japan  
 2016 External PhD Examiner, University College of London, UK  
 2016 Scientific Advisor, Faculty Appointment, TU Vienna, Austria

2011-            Reviewing Grant Applications for Swiss National Fonds  
2008-            Reviewing Grant Applications for German Science Foundation  
2014-            Reviewing Grant Applications for European Research Council

•    **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

1997 –           Member of German Physical Society  
1997 –           Member of American Physical Society  
2015 – 16       Member of American Association for the Advancement of Science  
2015 –           Member of Materials Research Society

## SELECTION OF 10 KEY PUBLICATIONS

1. Franz J. Giessibl, Atomic Resolution of the Silicon (111)-(7x7) Surface by Atomic Force Microscopy, *Science* **267**, 68 (1995).
2. Franz J. Giessibl, Advances in Atomic Force Microscopy, *Reviews of Modern Physics* **75**, 949 (2003).
3. J. Welker, F.J. Giessibl, Revealing the Angular Symmetry of Chemical Bonds by Atomic Force Microscopy. *Science* **336**, 444 (2012).
4. F. Pielmeier, F.J. Giessibl, Spin Resolution and Evidence for Superexchange on NiO(001) Observed by Force Microscopy. *Phys Rev. Lett.*, **110**, 266101 (2013).
5. A. J. Weymouth, T. Hofmann, F.J. Giessibl, Quantifying Molecular Stiffness and Interaction with Lateral Force Microscopy, *Science* **343**, 1120 (2014).
6. M. Emmrich, F. Huber, F. Pielmeier, J. Welker, T. Hofmann, M. Schneiderbauer, D. Meuer, S. Polesya, S. Mankovsky, D. Ködderitzsch, H. Ebert, F.J. Giessibl, Subatomic resolution force microscopy reveals internal structure and adsorption sites of small iron clusters. *Science* **348**, 308 (2015).
7. N. Okabayashi, A. Peronio, M. Paulsson, T. Arai, F.J. Giessibl, Vibrations of a molecule in an external force field. *PNAS* **115**, 4571 (2018).
8. F. Huber, J. Berwanger, S. Polesya, S. Mankovsky, H. Ebert, F.J. Giessibl, Chemical bond formation showing a transition from physisorption to chemisorption. *Science* **366**, 235 (2019).
9. F.J. Giessibl, The qPlus sensor, a powerful core for the atomic force microscope. *Rev. Sci. Instrum.* **90**, 011101 (2019)
10. F. Stilp, A. Bereczuk, J. Berwanger, N. Mundigl, K. Richter, F.J. Giessibl, Very weak bonds to artificial atoms formed by quantum corrals. *Science* **372**, 1196 (2021).