

Biographical Sketch of Peter Hänggi

Date of Birth: November 29-th, 1950, Bärschwil, Switzerland

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ResearcherID: **B-4457-2008**

Education

1970-1974: Studies of physics at the University of Basel, Switzerland

April 1974: Diploma in physics, University of Basel

Jan. 1977: PhD, Theoretical physics, University of Basel

Professional Experience

1977-1978: Research Associate University of Illinois, Urbana, USA

1978-1979: Guest Professor, Universität Stuttgart

1979-1980: Postgraduate research associate, University of California, San Diego, USA

1980-1983: Assistant professor of physics, Polytechnic Institute of New York, New York, USA

1983-1987: Associate professor (with tenure), Polytechnic Institute of New York, New York, USA

Since 1986: Professor (Ordinarius C4/W3) for Theoretical Physics (Emphasis: Statistical Physics), Institute of Physics, Universität Augsburg

Scientific Interests

Theoretical physics – Statistical Physics: Classical and Quantum

Dissipative quantum systems, physical biology, molecular electronics, Stochastic phenomena (Stochastic Resonance, Brownian motors, Rate theory), Nonlinear dynamics, Control of quantum transport (Floquet engineering), Classical and Quantum Thermodynamics, Quantum information processing, Relativistic Brownian motion and Relativistic Thermodynamics

International Activities

Editor-in-Chief: EPJ-B (2011-2016), **Editor/Co-editor:** Physical Review E (2003-2009), Europhysics Letters (1997-2010), New Journal of Physics (1998-2008), Physica A, Physical Biology (2003-2011), Chemical Physics (1994-2012), ChemPhysChem (2004-2011), Lecture Notes of Physics, EPJ-ST(Special Topics), Scientific Reports (Nature Publ. Group), Ukrainian J. Physics, Intern. Review of Electrical Eng., IREE, Intern. Review of Physics, IREPHY, The Open Journal of Chemical Physics.

Chairs: Scientific Advisory Committee (SAC) for European Physical Journal (EPJ): A, B, C, D, E, Appl. Phys., Member of the board of the German Physical

Society, DPG, (1994-2010) Chair of division of “Dynamics and Statistical Physics”, DPG, 2000-2003; board member, “Statistical and Nonlinear Physics” of the European Phys. Soc. (EPS) (2001-2009).

Accolades

- 1988:** Fellow of the American Physical Society
- 1995:** Nicolas Cabrera Professorship, Universidad Autonoma de Madrid, Spain
- 1998:** Michael Professorship, Weizmann Institute of Science, Israel
- 1999:** Fellow and Chartered Scientist Award (CSciCPhys/FInstP) Inst. of Physics
- 2001:** Elected external member of the MPI-PKS Dresden and member of the Max-Planck-Society
- 2002:** Humboldt Honorary Research Award of the Foundation of Polish Science
- 2003:** Eminent Scientist Award, RIKEN (Japan)
- 2003:** Elected member: German National Academy of Sciences *Leopoldina*
- 2005:** Dr. honoris causa from (i) the University of Silesia, Katowice (Poland); (ii) Universitat de Barcelona (Spain) and (iii) University of Camerino (Italy)
- 2005:** Elected foreign fellow: Am. Assoc. Adv. Science (AAAS)
- 2006:** Dr. honoris causa from Tartar State University of Humanities and Pedagogical Sciences, Kazan, Russia
Elena Aizen de Moshinsky Professorship, UNAM, Mexico-City (2006)
Jagiellonian University Medal “Plus ratio quam vis”, Krakow, in recognition for his most outstanding scientific achievements and his continued dissemination of statistical physics works which relate in spirit to the pioneering contributions by Marian von Smoluchowski.
- 2006:** Dr. honoris causa from the National Academy of Ukraine, Ukraine
- 2007:** Elected ordinary member of the Academia Europaea, Physics and Engineering Section
- 2007:** Award of honorary professor at Beijing Normal University, Beijing, China
- 2008:** Dr. honoris causa rer. nat. from the Humboldt University Berlin
- 2009:** Dr. honoris causa from the Universidad de Sevilla, Spain
- 2009:** Invited Distinguished Lecture Series at Asian Pacific Center for Theoretical Physics (APCTP)
- 2009:** elected *Outstanding Referee* of the American Physical Society (APS)
- 2009:** selected for ISIHighlyCited.com
- 2010:** Lindhard Lectureship Prize 2010, University of Aarhus, Denmark
- 2010:** Dr. honoris causa from the Bogolyubov Institute for Theoretical Physics, Kiev
- 2011:** The Lars Onsager Medal 2011 and “The Lars Onsager Lectureship Prize” (<https://www.ntnu.edu/onsager/lecture>)
- 2014:** elected member: European Academy of Sciences (EURASC)
- 2014:** distinguished scientist award and medal, Ben-Gurion University of the Negev, Israel (10.12.2014)
- 2015:** Elected foreign honorary member to the Academiei Române
- 2015:** Elected outstanding reviewer status, Elsevier publications
- 2016:** Dr. honoris causa from Lobachevsky University, Nizhny Novgorod, Russia
- 2018:** Blaise Pascal medal in Physics from the European Academy of Sciences
- 2018:** Honorary Professor from Huaqiao University, Xiamen, China
- 2018:** 15.11.2018: Marian-Smoluchowski-Emil-Warburg-Prize 2019, jointly awarded by the German and the Polish Physical Societies
- 2022:** September 27, 2022, American Physical Society’s 2023 Lars Onsager Prize, which recognizes outstanding research in theoretical statistical Physics including the quantum fluids “*For development of Brownian motors and pioneering contributions to nonequilibrium statistical physics, relativistic and quantum thermodynamics.*”

Reviews of Modern Physics

- P. Hänggi, P. Talkner, and M. Borkovec,
Reaction Rate Theory: Fifty Years After Kramers,
Rev. Mod. Phys. **62**: 251-342 (1990)
- L. Gammaitoni, P. Hänggi, P. Jung, and F. Marchesoni,
Stochastic Resonance,
Rev. Mod. Phys. **70**: 223-288 (1998)
- P. Hänggi and F. Marchesoni,
Artificial Brownian motors: Controlling transport on the nanoscale ,
Rev. Mod. Phys. **81**, 387-442 (2009)
- M. Campisi, P. Hänggi, and P. Talkner
Colloquium: Quantum fluctuation relations: Foundations and applications
Rev. Mod. Phys. **83**, 771-791 (2011)
- N. Li, J. Ren, L. Wang, Z. Gang, P. Hänggi, and B. W. Li,
Colloquium: Phononics: Manipulating heat flow with electronic analogs and beyond, Rev. Mod. Phys. **84**, (3) (2012)
- P. Talkner and P. Hänggi,
Colloquium: Statistical Mechanics and Thermodynamics at Strong Coupling: Quantum and Classical
Rev. Mod. Phys. **92**, 041002 (2020)

Physics Reports:

- P. Hänggi and H. Thomas,
Stochastic Processes: Time-Evolution, Symmetries and Linear Response,
Phys. Rep. **88**: 207-319 (1982)
- M. Grifoni and P. Hänggi, **Driven Quantum Tunneling,**
Phys. Rep. **304**: 229-358 (1998)
- S. Kohler, J. Lehmann and P. Hänggi,
Driven quantum transport on the nanoscale,
Phys. Rep. **406**: 379-443 (2005)
- J. Dunkel and P. Hänggi,
Relativistic Brownian motion,
Phys. Rep. **471**: 1-73 (2009)
- S. Denisov, S. Flach, and P. Hänggi,
Tunable transport with broken space-time symmetries,
Phys. Rep. **538**: 77-120 (2014)
- D. Hennig, C. Mulhern, L. Schimansky-Geier, G.P. Tsironis, and P. Hänggi,
Cooperative Surmounting of Bottlenecks
Phys. Rep. **586**, 1-51 (2015)

Advances in Chemical Physics:

- P. Hänggi and P. Jung,
Colored Noise in Dynamical Systems,
Advances in Chem. Phys., Vol. **89**: 239-326 (1995)

Advances in Physics:

- I. Goychuk and P. Hänggi,
Quantum dynamics in strong fluctuating fields,
Adv. Physics **54**: 525–584 (2005)

ChemPhysChem:

- P. Hänggi,
Stochastic Resonance in Biology,
ChemPhysChem **3**: 285–290 (2002)
- P. S. Burada, P. Hänggi, F. Marchesoni, G. Schmid, and P. Talkner,
Diffusion in confined geometries,
ChemPhysChem **10**: 45–54 (2009)