

Curriculum Vitae

Prof. Dr. Holger Schönherr

Personal details

Date and place of birth 10 March 1969 (Berlin, Germany)
Nationality German
Marital status married, 3 children
Titles Dr., Diplomchemiker
Position: W-3 University-Professor



Address

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Professional details

- Studies in chemistry and polymer chemistry & physics in Mainz and Toronto, 1989 - 1995
- Diploma with Prof. Dr. Helmut Ringsdorf, Johannes Gutenberg-Universität Mainz 1995
- Dissertation (Ph.D. with highest distinction, *met lof*) with Prof. Dr. G. Julius Vancso, University of Twente (Enschede, The Netherlands) 1999
- Postdoctoral fellow with Prof. Dr. Curtis W. Frank, Stanford University (USA), 2000 - 2001
- Assistant Professor (UD), University of Twente (Enschede, The Netherlands), 2001 - 2006
- Associate Professor (UHD), University of Twente (Enschede, The Netherlands), 2006 - 2008
- Guest Professor at the Shanghai Jiao Tong University, 2013 - 2016
- Full Professor (Universitätsprofessor W3) in Physical Chemistry, Universität Siegen (Germany), 2008 - today

Curriculum Vitae

Prof. Dr. Holger Schönherr

Administrative tasks (selected)

Head of Department (Departmentsprecher), Department of Chemistry - Biology, University of Siegen (Germany), 2015 - today

Vice Head of Department (Stellvertretender Departmentsprecher), Department of Chemistry - Biology, 2010 - 2014

Elected member of the Faculty Council, Faculty of Science and Technology, University of Siegen, 2010-2012, 2012-2014, 2015 - 2017

Member of the Scientific Advisory Committee, Faculty of Science and Technology, University of Siegen, since January 2013

Chair of the Scientific Advisory Committee, Faculty of Science and Technology, University of Siegen, since June 2015

Board Member, Micro- and Nanoanalytics Facility (MNaF) of the Faculty of Science and Technology, University of Siegen, since 2015

Research areas

- Organic & polymeric surfaces and (bio)interfaces; self-assembled organic & polymeric systems
- Molecular properties, reactivity and dynamics in confined polymeric systems
- Surface forces and surface analysis with scanning force microscopy

in particular:

- Nanocapsule, nanoparticle and hydrogel-based controlled release systems
- Methodology development in AFM for chemically sensitive imaging and nanoparticle analysis
- Nanotemplate fabrication and replication
- Surface nanobubbles
- Polymer brushes: responsive biointerfaces
- Nanomechanical properties by AFM
- Cell-surface interactions in highly defined microenvironments

Lectures / Teaching

General Chemistry, Physical Chemistry, Surfaces and Interfaces, Physical Chemistry of Nanostructured and Soft Materials, Surface Analytical Techniques

Curriculum Vitae

Prof. Dr. Holger Schönherr

Memberships

Gesellschaft Deutscher Chemiker (GDCh); American Chemical Society (ACS); Koninklijke Nederlandse Chemische Vereniging (KNCV); Deutsche Bunsen-Gesellschaft; Deutsche Kolloidgesellschaft; Deutsche Physikalische Gesellschaft (DPG), Australasian Colloids and Interface Society

Further activities

- Series Editor, Series Editor, Springer Laboratory - Manuals in Polymer Science
- Member of the Scientific Committee of POLYCHAR World Forum on Advanced Materials.
- Member of the editorial advisory board of Nanocontainers (Versita / de Gruyter) until 2015.
- Co-organizer of the Third International Conference on Scanning Probe Microscopy of Polymers, Rolduc, The Netherlands, 15. - 18.07.2003.
- Co-organizer of framework 6 Network of Excellence FRONTIERS Workshops "Advanced Macromolecular Systems Across the Length Scales (I, II and III)." (Enschede, The Netherlands 2006, 2007, 2008).
- Program Chair at Polychar-18, World Forum for Advanced Materials, Siegen, Germany, 07. - 10.04.2010
- Co-organizer of the *Bio-Nano Summer School* in Hirschegg, Austria (2011, 2012, 2013, 2014)
Co-organizer of the *International Conference on Scanning Probe Microscopy on Soft and Polymeric Materials*, Rolduc, The Netherlands, 23. - 26.09. 2012.
- Organizing Committee of the *International Conference on Scanning Probe Microscopy on Soft and Polymeric Materials* 2014, September 02 - 06, 2014, Toronto, Ontario, Canada
- Co-Organizer of Workshop on "Nanotechnology in Manufacturing", NIM2014, Ozyegin University, Istanbul, Turkey, 15.-17.10. 2014
- National Advisory Board European Polymer Federation Congress 2015 in Dresden, Germany.
- Member of the Scientific Committee for DOM2015 Young Scientist School, September 24 to 26, 2015 and International Symposium, September 28 to 30, 2015, Yerevan, Armenia
- Member of the International Board of the International Conference on Biomaterials, Bioengineering & Nano drug delivery (APA-2016) in Mauritius on 5-7 September 2016.
- Reviewer for leading chemistry and materials journals, e.g.: *ACS Nano*, *J. Am. Chem. Soc.*; *Biomacromolecules*, *Langmuir*, *Macromolecules*, *J. Phys. Chem. B*, *Angew. Chem.*; *Small*, *Soft Matter*, *Nanoscale*, *Adv. Mater.*, *Adv. Funct. Mater.*, as well as funding organizations, e.g. ERC,

Curriculum Vitae

Prof. Dr. Holger Schönherr

ESF, NWO (NL); Royal Society of Chemistry (GB), SNF (Swiss National Science Foundation), DFG (Germany), EU, Swedish Foundation for Strategic Research, Czech Science Foundation ACS Petroleum Research Fund (PRF), Humboldt foundation etc.

Main research projects

- 2001 – 2007: NWO VIDI project, Reactivity in confined environments: Towards combinatorial chemistry on the nanometer scale
- 2004 – 2006: STW SBIR project, Large volume chemical probes, Phase I & II
- 2005 – 2010: NWO Echo project, Supramolecular Interactions in H-bonded Dimers and Polymers by AFM-based SMFS
- 2005 – 2010: ICES/KIS NanoNed, AFM-Based Nanoscale Chemical Lithography
- 2006 – 2009: MESA+ SRO Bionanotechnology: Functional Nanocontainers as Stimulus Responsive Systems and [...] Nanoscale Reactors.
- 2010 – 2014: EU FP 7 Collaborative project, BacterioSafe, Active wound dressings based on biological mimicry
- 2011 - 2016: ERC Starting Grant, ASMIDIAS, Asymmetric microenvironments by directed assembly
- 2012 - 2013: EU FP7 Marie Curie Actions - International Research Staff Exchange Scheme (IRSES), KOALA - Novel strategies for wound management
- 2012 - 2013: Intra-Faculty Research Program 2012 - Surface Structuring of Azobenzene-Containing Polymer Films via Light Induced Mass Transport
- 2013 - 2014: Intra-Faculty Research Program 2013 - Investigation of Ligand-Quadruplex DNA-Interaction on Structured Surfaces
- 2013 - 2014: Intra-Faculty Research Program 2013 - Investigation of Effects of Pd Nanoparticles on *Daphnia magna*
- 2014 - 2015: DAAD-ATN (German Academic Exchange Service - Australian Technology Network of Universities) grant - *Optical Biosensors for Wound-Colonising Bacteria*
- 2014-2017: AiF-ZIM Projekt, *Entwicklung eines Indikatorstreifens zum Point of care Nachweis von Verderbniserregern in Lebensmitteln*, mit Firma Quh-Lab, Siegen
- 2015: Projekt im Rahmen der „Regionalen Forschungspartnerschaft“, *Ausspionieren Biofilm-bildender Bakterien in Rohren - Schnellnachweis von verborgenen Bakterien in Rohrleitungen durch Abfangen von Signalmolekülen der interbakteriellen Kommunikation*, mit Firma Quh-Lab, Siegen

Curriculum Vitae

Prof. Dr. Holger Schönherr

- 2015 - 2018: ERA-NET SIINN Project, *Fate and effect of wastewater-borne manufactured nanomaterials in aquatic ecosystems* (FENOMENO), project coordinator
- 2016 - 2017: Intra-Faculty Research Program 2016 - Lokalisierte Funktionalisierung von Aluminiumoxid Nanoporen mit stimulusresponsiven Polymeren und Untersuchung des aktiven Flüssigkeitstransports (NANOPOREN)
- 2017 - 2018: DAAD Project PPP Frankreich 2017, „*Theranostik gegen bakterielle Infektionen*“

Funding as P.I.

(a) before 2008: 860 k€

(b) since 2008: 3.06 M€

Awards & recognition

University of Siegen

- *Research Prize 2013 of the Faculty of Science and Technology, University of Siegen*
- *Appointment as Guest Professor at the Shanghai Jiao Tong University (2013 - 2016)*
- *International Polychar Materials Science Prize 2013*
- *Raphael-Eduard-Liesegang award of the German Colloid Society, September 2011*
- *ERC Starting Grant awardee (ASMIDIAS), 2011*

University of Twente

- *Poster Award at the 'Dutch Polymer Days 2002' in Lunteren (NL), February 2002*
- *NWO VIDI laureate ('NWO vernieuwingsimpuls', today: "VIDI") 2000*

Ph.D.

- *ACS Colloid and Surface Chemistry Fall 1999 Poster Award at the ACS National Meeting, New Orleans, LA., August 1999*
- *DSM Award for Chemistry and Technology (2.), June 1999*

Diploma

- *Schloessmann Preis (Biology and Materials Science), Max Planck Gesellschaft, Mainz, June 1995*

Curriculum Vitae

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(Co-)Supervision

18 Ph.D. theses (14 currently running), > 37 M.Sc. theses and > 17 B.Sc. theses completed.

Awards for supervised students and postdocs

- Ping Li: Prize for the "best student contribution" at the 23. International Conference on Bioencapsulation in Delft (The Netherlands), 2.-4. September 2015.
- Katrin-Stephanie Tücking: best talk in "Biointerfaces" at the 5th International Symposium of Surface and Interface of Biomaterials at the 24th Annual Conference of the Australasian Society for Biomaterials and Tissue Engineering (ASBTE) in Sydney (Australia) April 2015.
- "Award for the best presentation of how to approach future challenges in polymer sciences". Leibniz Young Polymer Scientist Forum 2014 in Aachen.
- Springer Best Masters 2014: Katrin-Stephanie Tücking.
- Springer Best Masters 2014: Inga Lilge.
- "Studienpreis der Alumni Chemie Siegen" 2014, Anna Schulte (B.Sc.).
- 2014 Annual Conference of the Australasian Society for Biomaterials and Tissue Engineering (ASBTE) in Lorne, Australia. Stephanie Müller (M.Sc.): Best poster prize in Micro/Nanoengineering.
- "Studienpreis der Alumni Chemie Siegen" 2013, Sven-Christian Sidenstein (M.Sc.).
- Polychar-20, 2012, Dubrovnik, M.Sc. Sven-Christian Sidenstein: IUPAC Poster Award.
- "Studienpreis der Alumni Chemie Siegen" 2012, Ludmilla Steier (M.Sc.).
- "Studienpreis der Alumni Chemie Siegen" 2011, Sven-Christian Sidenstein (B.Sc.).
- "Studienpreis der Alumni Chemie Siegen" 2011, Regina Fuchs (M.Sc.).
- Polychar-18, 2010, Siegen, Dr. Davide Tranchida: The Jürgen Springer Award for a Young Scientist.
- Dutch Polymer Days 2010, M.Sc. Joost Duvigneau: Best lecture award in the Technology session.
- Dutch Polymer Days 2010, M.Sc. Anika Embrechts: Best poster prize (in the Physics & Theory session).
- Chinese government award for outstanding self-financed students abroad 2009: Dr. Qi Chen.
- Dutch Polymer Days 2009, M.Sc. Anika Embrechts: Best lecture Prize for Physics & Theory.

Curriculum Vitae

Prof. Dr. Holger Schönherr

Host

4 Alexander von Humboldt Foundation postdoctoral fellows

1 DAAD funded Visiting Professor

2 DAAD funded Ph.D. candidates

Visiting PhD students and researchers: on average 12 person months / year

Output

- Author of “*Scanning Force Microscopy of Polymers*”, H. Schönherr, G. Julius Vancso, Springer Laboratory - Manuals in Polymer Science (Springer, Heidelberg, 2010)
- Editor of “*Surface Design: Applications in Bioscience and Nanotechnology*”, Eds.: R. Förch, H. Schönherr, A. T. A. Jenkins (WILEY-VCH, Weinheim, 2009)
- Number of invited lectures: > **110** (international conferences, industry, universities & research centers)
- Number of total publications in journals with referees: > **200** (incl. refereed book chapters)
- 1 patent (US 8136658 B2 Method of preserving a sensor in a container and a container containing a sensor and a storage solution) - **licensed** to *SmartTip bv*, Enschede (NL)
- Citation Analysis (ISI Web of Science, 14.01.2017): Number of citations: **4984**; H index **41** (ResearcherID D-5878-2014)
- Citation Analysis (Google Scholar, 14.01.2017): Number of citations: **6293**, H index **48**

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