

Curriculum Vitae of Prof. Dr. Simone Techert

Education:

- 1994 Diploma in Chemistry, Giessen University
Master thesis with Prof. M. Winnewisser: *The High Resolution Rovibrational Spectrum of Gaseous Bromocyanine.* (best marks)
- 1995-1996 Dr. rer. nat., Max Planck Institute for Biophysical Chemistry, Göttingen
PhD thesis with Prof. Dr. J. Troe and Dr. H. Staerk: *"Spectroscopy and Charge Transfer: Theoretical and Experimental Investigations on Pyrene Derivatives."* (summa cum laude)
- 2003 Venia legendi" in Physical Chemistry, Göttingen University, Germany: *"Fundamentals and Application of Time-resolved X-ray Diffraction."*

Professional career:

- 1997-1999 Postdoctoral and second scientist, European Synchrotron Radiation Facility, Grenoble, France
- 1999 Exchange Scientist Scripps Research Institute, La Jolla
- 2000-2005 Emmy Noether fellow and independent junior research group leader at the Max Planck Institute for Biophysical Chemistry
- 2002 Maternity Leave
- 2003 Habilitation in Physical Chemistry, Göttingen University
- 2005 Within the SPPS project: Exchange Scientist, Stanford Synchrotron Radiation Lightsource, Stanford
- 2006 - 2011 PI (Chemistry) of the Advanced Study Group of the MPG at the Centre for Free Electron Laser Science, Hamburg
- 2006 -2011 Minerva professorship (W2) and group leader at the Max Planck Institute for Biophysical Chemistry
- 2008 Maternity Leave
- 2011 Within the LCLS project: exchange Scientist, Stanford Synchrotron Radiation Source, Stanford
- Since 2012 Leader (W2, faculty) of the research group Structural Dynamics of (Bio)chemical Systems at the Max Planck Institute for Biophysical Chemistry
- 2012 Professorship offer (W3) to the chair of the Oswald Institute of Physical Chemistry, Leipzig University (declined)
- Since 2013 Full professorship (W3) on Ultrafast X-ray Spectroscopy and X-ray Methods at the Department of X-ray Physics at the Georg August University, Göttingen
Leader of the Dept. X-ray Methods in Chemical Structural Dynamics Science at the Photon Science Division / DESY / Hamburg
- 2014 DESY Spokesperson (Chemical Sciences) of the Helmholtz *HeisenbergRIXS* Konsortium of the European XFEL

Awards and elected memberships

1999	ESRF-Prize " <i>Prime de Performance</i> "
2001-2005	Emmy Noether Fellowship of the German Research Council (DFG)
2002	Karl Winnacker Prize of the Aventis Foundation
2004-2013	Member of the Photon Science Committee at DESY, Hamburg
2005	German Röntgen Prize of the Justus Liebig University, Giessen
2006 - 2011	Minerva Professorship of the Max Planck Society, München
2008-2013	Vice chair of the Photon Science Committee at DESY, Hamburg
2010	Member of the Robert Bosch Foundation Excellence Cluster "AcademiaNet"
2013	Helmholtz Recruitment Initiative Selection, Helmholtz Society
2013	Morino Lectureship Award of the Japanese Chemical Society

Honorary activities in Academics, Society, and Politics (selection)

2004-2013	Member of the Photon Science Committee at DESY (Germany)
Since 2004	Referee for various national research councils like National Science Foundation / Department of Energy (USA), British Royal Society of Science, German Research Council, European Science Foundation, Dutch Science Foundation, Czech Science Foundation Referee for various research journals (Angewandte Chem. Int. Ed., J. Am. Chem. Soc., J. Phys. Chem., J. Chem. Phys., Phys. Rev. Lett., Biophys. J., Chem. Phys. Phys. Chem., Phys. Chem. Chem. Phys., Chem. Phys. Phys. Chem., J. Synchr. Rad., New J. of Synchr. Rad., J. Synchr. Rad., J. Appl. Cryst., Acta Cryst. A and C, Nat. Chem., Science, Nature, Nat. Sci. Rep, Opt. Expr.
Since 2006	Member of various "Berufungskommissionen" in Germany
2005-2011	Equal Gender Representative of the MPIbpC (vice and full)
2006-2013	Member of the Proposal Review Pannell of the Swiss Light Source (Switzerland)
2007-2013	Member of the Science Foundation Board of the European X-ray Free Electron Laser EXFEL (Germany)
Since 2008	Member of various external thesis committees (Danmark, Sweden, U.K.)
2008-2013	Member of the Proposal Review Pannell of the Advanced Photon Source (USA)
2008-2013	Vice chair of the Photon Science Committee at DESY (Germany)
Since 2008	IMPRS /GGNB lecturer, training courses (Göttingen)
Since 2010	Member of the Göttingen University Net <i>Mentoring Female Researchers</i> for promoting young female students and researchers at Göttingen University

2011-2013	Member of the Minerva Net <i>FemmeNet</i> for promoting young female students and researchers in Germany
Since 2013	International Advisory Committee of the UK consortium <i>Metastable Materials</i> , UK
Since 2015	Member of the Helmholtz Net <i>Taking the lead</i> and <i>Mentoring for Women in Natural Sciences</i> for promoting young female students and researchers
Since 2015	Member of the PIER <i>Mentoring</i> program for promoting young female students and researchers at DESY
Since 2015	Member of the Proposal Review Pannell of the European Synchrotron Radiation Facility (France)

Summary of Research

With different photon-based technologies we investigate energy conversion and structural changes of molecules during chemical reaction. Precisely, we study the reacting molecules' time-dependent electronic and spatial behaviour. Beside developments in ultrafast optical spectroscopy, we continue to develop so-called "molecular movie methods" in the time-resolved and ultrafast X-ray field which include various types of ultrafast X-ray spectroscopy as well as high-resolution ultrafast X-ray diffraction and scattering techniques.

In a chemical reaction, typical time scales of atomic or molecular motions start from femtoseconds, meaning the billionth of a millionth of a second. Life relevant motions, however, like moving a pen during writing, can be as slow as seconds or even down to minutes' or hours' time scales. How are these time scales connected? To what extend do structural motifs freeze in time and how is structural dynamics' information then distributed in space? Which type of apparatus needs to be built and which kind of methods need to be developed for investigating the created femtosecond "time stamps" in the structure of complex matter during the time course of a chemical or biochemical reaction?

After pioneering work in the field of ultrafast X-ray science, which has been lead to the expression of the "molecular movie" research at synchrotrons and free electron lasers, we currently continue developing novel ultrafast photon-based methods (optical and in the X-ray regime) for investigating structural dynamics behaviour in chemical and biochemical reactions of more complex nature. Applied methods include ultrafast photo electron diffraction or Coulomb explosion schemes, ultrafast two-dimensional X-ray spectroscopy, ultrafast X-ray emission spectroscopy combined with ultrafast X-ray scattering schemes or ultrafast optical and X-ray crystallography / X-ray diffraction. Proceeding laboratory-based methods, free electron laser radiation makes it possible not only to study unimolecular reactions, which is the classical theme of ultrafast chemical research, but also to investigate bimolecular reaction in the liquid phase which are the more common type of reactions in nature.

http://photon-science.desy.de/research/research_teams/structural_dynamics_in_chemical_systems_fs_sc/index_eng.html;
<http://www.roentgen.physik.uni-goettingen.de/>; <http://www.mpibpc.mpg.de/de/techert>

Publications:

Publications of the whole workgroup (> 300) are originally provided at

<http://photon->

[science.desy.de/research/research_teams/structural_dynamics_in_chemical_systems_fs_scs/publications/2017/index_eng.html](http://photon-science.desy.de/research/research_teams/structural_dynamics_in_chemical_systems_fs_scs/publications/2017/index_eng.html)

or

<http://www.mpibpc.mpg.de/72080/publications>

personal profile publications under:

<http://scholar.google.de/citations?user=Ncm8AMsAAAAJ&hl=de&oi=ao>

h-index of the whole FS-SCS workgroup > 70.

Teaching

International DESY and Max Planck Research Schools:

- 1) 2 SWS / a: 4 hours lecture about basics and application of synchrotron and free electron laser radiation, DESY international student's days
- 2) 4 hours / a: HERCULES summer courses for students at large scale facilities (biologists, chemists, physicists) - lecture, DESY, ESRF
- 3) 4 hours / a: DESY summer school courses for students at large scale facilities (biologists, chemists, physicists) – practical course, DESY
- 4) 2 hours / a: Comprehensive introduction in x-ray methodologies for biomolecular research, PIER graduate school DESY
- 5) 4 hours / a: GGNB / IMPRS of the Physics of Complex Systems, MPIbpC: introduction into FEL and synchrotron research - lecture
- 6) 4 hours / a: GGNB / IMPRS of the Physics of Complex Systems, Practical class: introduction into FEL and synchrotron research – practical course at DESY
- 7) IMPRS schools contribution at Stuttgart, Heidelberg

University teaching activities:

- 1) 8 SWS / a: Lecture Basics and application of synchrotron and free electron laser radiation, Bachelor, Master class in Chemistry, Physics, Structural Biology (GAUSS program)
- 2) 8 SWS / a: Lecture Basics and application of synchrotron and free electron laser radiation, PhD class in Chemistry, Physics, Structural Biology (GAUSS program)
- 3) 2 SWS / a: Master students practical course at DESY: Introduction into synchrotron research (within GAUSS program)
- 4) 2 SWS / a: Master students practical course at DESY: advanced experimental x-ray methods (synchrotron and FLASH-FEL) (within GAUSS program)