

Curriculum vitae

Prof. Dr. Jan Lipfert

Prof. Dr. Jan Lipfert
Department of Physics
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80799 Munich, Germany

Phone: +49-89-2180 2005
Email: Jan.Lipfert@lmu.de
Date of birth: October 8, 1977
Place of birth: Frankfurt am Main, Germany
Citizenship: German

Education

- 1/2008 **Ph.D. in Physics**, *Stanford University, CA, USA*
Specialization in theoretical and experimental biophysics (GPA 4.12/4.0)
Thesis: “*Small-Angle X-Ray Scattering of RNA, Proteins, and Membrane Protein-Detergent Complexes*” Adviser: Sebastian Doniach; Co-advisers: Daniel Herschlag and Vijay S. Pande
- 5/2002 **Master of Science**, *University of Illinois at Urbana-Champaign, IL, USA*
Graduate coursework in mathematical, biological and condensed matter physics (GPA 3.91/4.0)
- 6/2001 **M. Phil.** (“Filosofie Magister”), *Uppsala Universitet, Sweden*
Major: physics; Minor: mathematics; Thesis: “*Radiation induced damage in serine phosphate - a model for strand breakage in DNA*” Advisers: Leif A. Erikson, Janos Hajdu
- 7/2000 **Undergraduate in Economics** (“Vordiplom”), *Ruprecht-Karls-Universität Heidelberg, Germany*
Final grade: A- (1.2 on the German grading scale; ranked 1st of 135 students)
- 6/2000 **Undergraduate in Physics** (“Vordiplom”), *Ruprecht-Karls-Universität Heidelberg, Germany*
Final grade: A (1.0 on the German grading scale)
- 6/1997 **High School Diploma** (“Abitur”), *Friedrichsgymnasium Kassel, Germany*
Valedictorian; Final grade: A (1.0 on the German grading scale)

Employment

- since 9/2013 **Professor** (W2, tenure track) *Department of Physics, Ludwig-Maximilian-University Munich*
- 10/2007-7/2013 **Post doc** in the lab of Nynke Dekker, *Delft University of Technology, The Netherlands*
Independent funding since 2/2010 through a 250 k€ VENI grant
- Pioneered novel magnetic tweezers to directly measure single-molecule torque and twist
 - Applied magnetic and optical tweezers to investigate DNA and RNA mechanical properties, protein-DNA and drug-DNA interactions, and topoisomerase-mediated supercoil removal
- 9/2002-10/2007 **Research Assistant** in the lab of Sebastian Doniach, *Stanford University, CA, USA*
- Combined small-angle X-ray scattering and molecular modeling to investigate the solution structure of functional RNAs, peptides, proteins, and membrane protein-detergent complexes
 - Mastered RNA wet lab chemistry and electrostatic modeling
 - Developed large scale simulations of conformations and free energies in amyloidogenic peptides

Internships and National Service

- 1/2006 – 3/2006 **Research Assistant**, *Institut Pasteur, Paris, France*
RNA electrostatics calculations; modeling of RNA thermodynamics and conformational changes
- 6/2003 – 8/2003 **Research Assistant**, *Institut Pasteur, Paris, France*
Simulation of protein dynamics using stochastic differential equations
- 6/2002 – 8/2002 **Internship** as management consultant, *Siemens Management Consulting, Munich, Germany*
- 7/1999 – 8/1999 **Internship** as financial analyst, *Wintershall U.K. Ltd, London, U.K.*
- 6/1998 – 7/1998 **Internship** as assistant for quality control, *Alstom Energy Systems - SHG, Kassel, Germany*
- 7/1997 – 6/1998 **National service** as emergency medical technician, *Arbeiter-Samariter-Bund, Kassel, Germany*

Honors and Awards

07/2012	Offer of a tenure-track associate professorship, KU Leuven, Belgium (declined)
04/2011	Offer of a tenure-track assistant professorship, University of Twente, The Netherlands (declined)
2010-2013	VENI postdoctoral fellowship of the Dutch Organization for Scientific Research (NWO) (Three year grant with a total budget of 250,000 €)
11/2009	TU Delft postdoctoral fellowship (declined)
7/2007	Margaret C. Etter Student Lecturer Award, American Crystallographic Association
6/2006	Student travel award for the SAS 2006 meeting, Kyoto, Japan
2001 – 2004	Fellowship of the German National Merit Foundation (“ Studienstiftung des deutschen Volkes ”) (Fellowship awarded to the top 0.25% of German students)
2001 – 2002	Fulbright Fellowship for the academic year 2001/2002
2000 – 2001	Erasmus Fellowship for the academic year 2000/2001
1999 – 2001	Fellowship of the “ Stiftung der deutschen Wirtschaft ” (SDW)
1/1994	First place German National Latin Competition (“Bundeswettbewerb Fremdsprachen”)
1992 – 1996	Men’s crew state champion in 1992-96; 2nd and 6th place in nationals in 1994 and 1996

Teaching

Winter 2013, 2014 & 2015	Instructor for <i>Physics for Chemists I</i> (PN1) at the LMU Munich (in German)
Spring 2015	Introductory physics course on mechanics, fluids, and waves for chemistry/biochemistry majors Instructor (joint with D. Pippig and J. Rädler) for <i>Modern Experimental Methods in Biophysics</i> at the LMU Munich
Winter 2014 & 2015	Instructor (joint with H.E. Gaub, T. Liedl, B. Nickel, and P. Paulitschke) for <i>Research Topics in Biophysics</i> at the LMU Munich (in German)
Summer 2014 & 2015	Instructor for <i>Biophysics of Macromolecules</i> at the LMU Munich Graduate level course covering the breadth of molecular biophysics
Spring 2011	Supervisor/instructor: Mentored high school teachers in training at the TU Delft in developing a “Bionanoscience” teaching module for high school science classes (in Dutch)
Fall 2009, 2010 & 2011	Instructor: Designed and taught (in Dutch) a journal club on physical methods in the biological sciences as part of the TU Delft B.Sc. “honors track” program
Summer 2009	Instructor (joint with B. Menze): Designed and taught (in German) a three week summer course on bioinformatics for gifted high school seniors from five countries as part of the Deutsche SchülerAkademie (German Student Academy) program
Fall 2008 & 2009 2004-2007	Instructor for the section on polymer statistics for <i>Biophysics</i> at TU Delft Supervisor for several undergraduate students in thesis research projects at Stanford University Served as judge for high school science fairs in the bay area
Spring 2004	Teaching Assistant for <i>Computational Physics</i> at Stanford University Course on numerical methods and applications in the physical sciences (Prof. Cabrera)
Winter 2003	Teaching Assistant for <i>Mathematical Methods of Physics</i> at Stanford University Course on advanced mathematical techniques for 2nd and 3rd year physics majors (Prof. Fetter)
Fall 2002	Teaching Assistant for <i>Mechanics and Heat</i> at Stanford University Introductory course for non-physics majors (Prof. Wojcicki)

Student supervision and Mentorship

- **Mentor** (“Vertrauensdozent”) for students of the German National Merit Foundation since 2014
- **Service on habilitation examination committees:**
Wilfried Grange (2015, “Habilitation à diriger des recherches”, Université Paris 7, France)
- **Service on Ph.D. examination committees** (at the LMU Munich, unless otherwise noted):
Willem Vanderlinden (2012, KU Leuven, Belgium), Alexander Buchner (2013), Michael Aumer (2014), Anna-Kristina Marel (2014), Stefan Rau (2014), Zazralt Magic (2014), Christoph Klingner (2014), Louis Reese (2014), Margherita Bonzini (2014), Franziska Schnell (2014), Jiayi Liu (2014), Svenja Lippok (2014), Christopher Kurz (2014), Jordan Monnet (2014, Institut Jacques Monod / Université Paris 7, France), Jin Jeon (2015), Brendan L. Osberg (2015), Philipp Lang (2015), Silke Kirchner (2015), Giovanni Rosotti (2015), John Holland (2015), Thorben Seggebrock (2015), Christina Hennig (2015), Farzad Sekhavati (2015), Spas Nedev (2015), Samira Hertrich (2015), Waldemar Schneider (2015), Marc Diepold (2015), Thomas Gerling (2015, TU Munich), Florian Niederhofer (2016)
- **Supervisor** for Ph.D. students and post docs at the LMU Munich:
Franziska Kriegel (PhD, since 2014), Linda Brützel (PhD, since 2014), Philipp Walker (PhD, since 2014), Thomas Zettl (PhD, since 2014), Willem Vanderlinden (post doc, since 2015)
- **Supervisor** for Bachelor and Master level students at the LMU Munich:
Ann-Kathrin Wagner (Bachelor), Isabelle Stüwe (Bachelor), Jürgen Kreiter (Master), Johannes Dietrich (Bachelor), Niklas Ermann (Bachelor), Stella Capone (Master), Steffen Sedlak (Master), Julian Nguyen (Bachelor), Flavio Auer (Bachelor), Klara Kulenkampff (Bachelor), Johannes Stein (Bachelor), Annalena Salditt (Bachelor), Samuel Stubhan (Bachelor), Sophie Tschirpke (Master)
- **Supervisor** for Bachelor and Master level students at the TU Delft:
Ruaridh Forbes (summer student), Toivo Hensgens (Bachelor), Johannes Keegstra (Master), Renier Daudey (co-supervisor, Master), Aafke van den Berg and Gerwin Koolstra (KNAW fellowship students), Tessa Jager (Master), Peter Jan Laverman (Master), Iris Koster (Bachelor), Maylon Rojer (Master), Sven Klijnhout (Bachelor), and Xiaomin Hao (Master)

Memberships and Professional Service

- **Member** of the Program Committee for the LMU-TUM Physics Colloquium since 2015
- **Member** of the Program Committee for the CeNS Venice Conference 2015
- **Member** of the selection committee for the “Dr. Hans-Riegel-Fachpreis” (high school science prize) 2014 and 2015
- **Ordinary Member** of the Center for NanoScience (CeNS) Munich since 2013
- **Chair** of the Biophysical Society Molecular Biophysics Subgroup, 2012/2013
- **Student representative** on the **Graduate Studies Committee**, Department of Physics, Stanford University, 2003-2007
- **Member** of the Biophysical Society since 2003; of the German Physical Society (DPG) since 1999
- **Editor** for *Scientific Reports* and *The Scientific World Journal*
- **Referee** for *Adv. Colloid Interface Sci.*, *Analytical Chemistry*, *Biochemistry*, *Biophysical J.*, *EMBO J.*, *FEBS J.*, *J. Appl. Cryst.*, *J. Chem. Phys.*, *J. Phys. Chem.*, *Mol. Biol. Cell*, *Nanoscale*, *Nature*, *Nature Communications*, *Nature Methods*, *Nature Protocols*, *Nucleic Acids Research*, *Phys. Rev. Lett.*, *Phys. Rev. E*, *PLOS ONE*, *Protein Expression & Purification*, *Rev. Sci. Instrum.*, *RNA*, *Scientific Reports*, and *The Scientific World Journal*
- **Reviewer** for The Wellcome Trust, UK; the Research Council of the KU Leuven, Belgium;
the selection committee of the Flemish Agency for Innovation by Science and Technology (IWT), Belgium;
the Stanford Synchrotron Radiation Laboratory *Proposal Review Panel*, USA;
the INCITE petascale-computation awards program (US Department of Energy), USA;
the German Science Foundation (DFG), Germany; the “LOEWE” program of the State of Hesse, Germany;
the National Research, Development, and Innovation Office (NKFIH), Hungary

Languages

German (native), English (native-like; 5/C2), Dutch (fluent; 3/C1), French (fluent; 3/C1), Swedish (good knowledge; 2/B1), Spanish (basic knowledge; 1/A2), Latin (*Grades refer to the ILR/CEFR scales*)

List of Publications and Presentations

Prof. Dr. Jan Lipfert

Journal Publications (Total citations: 2015; H-index: 29)

49. Franziska Kriegel, Niklas Ermann, and Jan Lipfert
“Probing the Mechanical Properties, Conformational Changes, and Interactions of Nucleic Acids with Magnetic Tweezers”, *Submitted*
48. Thomas Zettl, Rebecca S. Mathew, Sönke Seifert, Pehr A.B. Harbury, Sebastian Doniach, and Jan Lipfert
“Measuring Intra-Molecular Distances by Anomalous Small-Angle X-ray Scattering”, *Submitted*
47. Linda Bruetzel, Stefan Fischer, Steffen Sedlak, Annalena Salditt, Bert Nickel, Jan Lipfert
“A Mo-Based In-House Source for Small-Angle X-Ray Scattering Measurements of Biological Macromolecules”
Rev. Sci. Instrum. 87:025103 (2016)
46. Jochen P. Müller, Salome Mielke, Achim Löff, Tobias Obser, Christof Beer, Linda Bruetzel, Diana A. Pippig, Willem Vanderlinden, Jan Lipfert, Reinhard Schneppenheim, and Martin Benoit
“Force sensing by the vascular protein von Willebrand Factor is tuned by a strong intermonomer interaction”
Proc. Natl. Acad. Sci. U.S.A. 113:1208-13 (2016)
45. Magdalena Gebala, George M. Giamba?u, Jan Lipfert, Namita Bisaria, Steve Bonilla, Guangchao Li, Darrin M. York, Daniel Herschlag
“Cation-Anion Interactions within the Nucleic Acid Ion Atmosphere Revealed by Ion Counting Studies”
J. Am. Chem. Soc. 137:14705-15 (2015)
44. David Dulin, Thijs Cui, Jelmer Cnossen, Jan Lipfert, Nynke H. Dekker
“High Spatiotemporal Resolution Magnetic Tweezers for Single-Molecule Force Spectroscopy: Calibration and Applications to DNA Dynamics”
Biophys. J. 109:2113D2125 (2015)
43. Korbinian Liebl, Tomas Drsata, Filip Lankas, Jan Lipfert, and Martin Zacharias
“Explaining the striking difference in twist-stretch coupling between DNA and RNA: A comparative molecular dynamics analysis”
Nucleic Acids Res. 43:10143-56 (2015)
42. Maarten M. van Oene, Laura E. Dickinson, Francesco Pedaci, Mariana Köber, David Dulin, Jacob W. J. Kersse-makers, Jan Lipfert*, and Nynke H. Dekker* (*Joint corresponding authorship)
“Biological Magnetometry: Torque on Superparamagnetic Beads in Magnetic Fields”
Phys. Rev. Lett. 114:218301 (2015)
41. Rifka Vlijm, Mina Lee, Jan Lipfert, Alexandra Lusser, Cees Dekker, and Nynke H. Dekker
“Nucleosome assembly dynamics involve spontaneous fluctuations in the handedness of tetrasomes”
Cell Rep. 10:1-10 (2015)
40. Jan Lipfert, Maarten M. van Oene, Mina Lee, Francesco Pedaci, and Nynke H. Dekker
“Torque Spectroscopy for the Study of Rotary Motion in Biological Systems”
Chemical Reviews 115:1449-74 (2015)
This article was featured on the cover of the February 2015 issue of *Chemical Reviews*.
39. Zhongbo Yu, David Dulin, Jelmer Cnossen, Mariana Köber, Maarten van Oene, Orkide Ordu, Bojk Berghuis Jan Lipfert, and Nynke H. Dekker
“A Force Calibration Standard for Magnetic Tweezers”
Rev. Sci. Instrum. 85:123114 (2014)
38. Ryan Oliver, Jan Lipfert, Daniel Fox, Ryan Lo, Justin Kim, Sebastian Doniach, and Linda Columbus
“Tuning Micelle Dimensions and Properties with Binary Surfactant Mixtures”
Langmuir 30:13353-61 (2014)

37. Jan Lipfert, Gary M. Skinner, Johannes Keegstra, Toivo Hensgens, Tessa Jager, Mariana Köber, Zhongbo Yu, Serge Donkers, Fang-Chieh Chou, Rhiju Das, and Nynke H. Dekker
“Double-Stranded RNA under Force and Torque: Similarities to and Striking Differences from Double-Stranded DNA”
Proc. Natl. Acad. Sci. U.S.A. 111:15408-13 (2014)
36. Fang-Chieh Chou, Jan Lipfert, and Rhiju Das
“Blind Predictions of DNA and RNA Tweezers Experiments with Force and Torque”
PLOS Computational Biology 10:e1003756 (2014)
35. Willem Vanderlinden, Jan Lipfert, Jonas Demeulemeester, Zeger Debysers, and Steven De Feyter
“Structure, mechanics, and binding mode heterogeneity of LEDGF/p75-DNA nucleoprotein complexes as revealed by scanning force microscopy”
Nanoscale 6:4611-9 (2014)
34. Jan Lipfert, Mina Lee, Orkide Ordu, Jacob W.J. Kerssemakers, and Nynke H. Dekker
“Magnetic Tweezers for the Measurement of Twist and Torque”
Journal of Visualized Experiments 19:87 (2014)
33. Jan Lipfert, Sebastian Doniach, Rhiju Das, and Daniel Herschlag
“Understanding Nucleic Acid-Ion Interactions”
Annual Review of Biochemistry 83:813-41 (2014)
32. Mina Lee, Jan Lipfert, Humberto Sanchez, Claire Wyman, and Nynke H. Dekker
“Structural and Torsional Properties of the RAD51-dsDNA Nucleoprotein Filaments”
Nucleic Acids Res. 41:7023-30 (2013)
 This article and our rendering of a RAD51 filament assembling in the freely-orbiting magnetic tweezers were featured on the cover of *Nucleic Acid Research* 41(14), August 2013.
31. Ryan C. Oliver, Jan Lipfert, Daniel A. Fox, Ryan H. Lo, Sebastian Doniach, and Linda Columbus
“Dependence of Micelle Size and Shape on Detergent Alkyl Chain Length and Head Group”
PLOS ONE 8:62488 (2013)
30. David Dulin, Jan Lipfert, M. Charl Moolman, and Nynke H. Dekker
“Studying Genomic Processes at the Single-Molecule Level: Introducing the Tools and Applications”
Nature Reviews Genetics 14:9-22 (2013)
 This article was featured on the cover of the January 2013 issue of *Nature Reviews Genetics*.
29. Adelene Y.L. Sim, Jan Lipfert, Daniel Herschlag, and Sebastian Doniach
“Salt dependence of the radius of gyration and flexibility of single-stranded DNA in solution probed by small-angle x-ray scattering”
Phys. Rev. E. 86:021901 (2012)
28. Xander Janssen[†], Jan Lipfert[†], Tessa Jager, Renier Daudey, and Nynke H. Dekker
“Electromagnetic Torque Tweezers: A Versatile Approach for Measurement of Single-Molecule Twist and Torque”,
Nano Letters 12:3634-9 (2012) ([†]Authors contributed equally)
27. Jan Lipfert[†], Jacob W.J. Kerssemakers[†], Maylon Rojer, and Nynke H. Dekker
“A method to track rotational motion for use in single-molecule biophysics”
Rev. Sci. Instrum. 82:103707 (2011) ([†]Authors contributed equally)
 This article was featured as a *Research Highlight* by the *Rev. Sci. Instrum.*, placed in the journal’s top 5 most read articles in November 2011, and was selected for the *Vir. J. Bio. Phys. Res.* vol. 22 issue 9 (2011).
26. Jan Lipfert[†], Matthew Wiggin[†], Jacob W.J. Kerssemakers, Francesco Pedaci, and Nynke H. Dekker
“Freely-Orbiting Magnetic Tweezers to Directly Monitor Changes in the Twist of Nucleic Acids”
Nature Communications 2:439 (2011) ([†]Authors contributed equally)
 This article was featured by the Dutch Foundation for Fundamental Research on Matter and by the TU Delft
 “Watching DNA do the twist” (2011).

25. Jan Lipfert, Jacob W.J. Kerssemakers, Tessa Jager, and Nynke H. Dekker
“Magnetic Torque Tweezers: Measuring Torsional Stiffness of DNA and RecA-DNA filaments”
Nature Methods 12:977-80 (2010)
 This article was featured as a *Physics Update* “A new twist on magnetic tweezers” in *Physics Today* (2010), as an article “DNA’s torque unravelled” in the *TU Delta* 31 (2010), and highlighted as a “Kunststuk” by the Dutch Foundation for Fundamental Research on Matter (2010).
24. Jan Lipfert, Sven Klijnhout, and Nynke H. Dekker
“Torsional Sensing of Small-Molecule Binding Using Magnetic Tweezers”
Nucleic Acids Res. 38:7122-32 (2010)
23. Aartjan J.W. te Velthuis, Jacob W.J. Kerssemakers, Jan Lipfert, and Nynke H. Dekker
“Quantitative guidelines for force calibration through spectral analysis of magnetic tweezers data ”
Biophys. J. 99:1292-302 (2010)
22. Jan Lipfert[†], Adelene Y.L. Sim[†], Daniel Herschlag, and Sebastian Doniach
“Dissecting Electrostatic Screening, Specific Ion Binding, and Ligand Binding in an Energetic Model for Glycine Riboswitch Folding”
RNA 16:708-719 (2010) (†Authors contributed equally)
21. Mona Ali, Jan Lipfert, Sönke Seifert, Daniel Herschlag, and Sebastian Doniach
“The Ligand-Free State of the TPP Riboswitch, A Partially Folded RNA Structure”
J. Mol. Biol. 396:153-65 (2010)
20. Vincent B. Chu, Jan Lipfert, Yu Bai, Vijay S. Pande, Sebastian Doniach, and Daniel Herschlag
“Do conformational biases of simple helical junctions influence RNA folding stability and specificity?”
RNA 15:2195-205 (2009)
19. Jan Lipfert, Xiaomin Hao, and Nynke H. Dekker
“Quantitative Modeling and Optimization of Magnetic Tweezers”
Biophys. J. 96:5040-9 (2009)
18. Linda Columbus, Jan Lipfert, K. Jambunathan, Daniel A. Fox, Adelene Y.L. Sim, Sebastian Doniach, and Scott A. Lesley
“Mixing and Matching Detergents for Membrane Protein NMR Structure Determination”
J. Am. Chem. Soc. 131:7320-6 (2009)
 This article was featured in *APS Science, the Advanced Photon Source Annual Report 2009*, p. 40-41 (2010).
17. Vincent B. Chu, Yu Bai, Jan Lipfert, Daniel Herschlag, and Sebastian Doniach
“A repulsive field: advances in the electrostatics of the ion atmosphere”
Curr. Opin. Chem. Biol. 12:619-25 (2008)
16. Jan Lipfert[†], Jonathan Ouellet[†], David G. Norman, Sebastian Doniach, and David M. J. Lilley
“The Structure of the Complete VS Ribozyme in Solution by Small-Angle X-Ray Scattering”
Structure 16:1357-67 (2008) (†Authors contributed equally)
15. Yu Bai, Vincent B. Chu, Jan Lipfert, Vijay S. Pande, Daniel Herschlag, and Sebastian Doniach
“Critical assessment of nucleic acid electrostatics via experimental and computational investigation of an unfolded state ensemble”
J. Am. Chem. Soc. 130:12334-41 (2008)
14. Benjamin J. Spink, Sivaraj Sivaramakrishnan, Jan Lipfert, Sebastian Doniach, and James A. Spudich
“Long Single alpha-Helical Tail Domains Bridge the Gap between Structure and Function of Myosin VI”
Nature Struct. Mol. Biol. 15:591-597 (2008)
 This article was featured on the cover of the June 2008 issue of *Nature Struct. Mol. Biol.*.
13. Yu Bai, Kevin Travers, Vincent B. Chu, Jan Lipfert, Daniel Herschlag, and Sebastian Doniach
“Quantitative and Comprehensive Decomposition of the Ion Atmosphere around Nucleic Acids”
J. Am. Chem. Soc. 129:14981-88 (2007)
12. Jan Lipfert, Linda Columbus, Vincent B. Chu, Scott A. Lesley, and Sebastian Doniach
“Size and Shape of Detergent Micelles by Small-Angle X-ray Scattering”
J. Phys. Chem. B 111:12427-38 (2007)

11. Vincent B. Chu, Yu Bai, Jan Lipfert, Daniel Herschlag, and Sebastian Doniach
“Evaluation of Ion Binding to DNA Duplexes Using a Size-Modified Poisson-Boltzmann Theory”
Biophys. J. 93:3202-3209 (2007)
 This article was selected as a Research highlight “Size is Important” in *Biopolymers* 87(1):iii (2007)
10. Jan Lipfert, Vincent B. Chu, Yu Bai, Daniel Herschlag, and Sebastian Doniach
“Low Resolution Models for Nucleic Acids from Small-Angle X-ray Scattering with Applications to Electrostatic Modeling”
J. Appl. Cryst. 40:235-239 (2007)
9. Jan Lipfert, Linda Columbus, Vincent B. Chu, and Sebastian Doniach
“Analysis of Small-Angle X-ray Scattering Data of Protein-Detergent Complexes by Singular Value Decomposition”
J. Appl. Cryst. 40:229-234 (2007)
8. Jan Lipfert and Sebastian Doniach
“Small-Angle X-Ray Scattering from RNA, Proteins, and Protein Complexes”
Ann. Rev. Biophys. Biomol. Struct. 36:307-27 (2007)
7. Jan Lipfert, Rhiju Das, Vincent B. Chu, Madhuri Kudaravalli, Nathan Boyd, Daniel Herschlag, and Sebastian Doniach
“Structural Transitions and Thermodynamics of a Glycine-Dependent Riboswitch from *Vibrio cholerae*”
J. Mol. Biol. 365:1393-1406 (2007)
 This article was selected as an *APS Science Highlight* “Watching a Glycine Riboswitch ‘Switch’” (March 2007) and classified as “of special interest” (*Curr. Opin. Struct. Biol.* 17:562-71, 2007) and as “of outstanding interest” (*Curr. Opin. Microbiol.* 10:176-81, 2007)
6. Gautam Dantas, Alexander L. Watters, Bradley Lunde, Ziad Eletr, Nancy Isern, Jan Lipfert, Sebastian Doniach, Brian Kuhlman, Barry L. Stoddard, Gabriele Varani, and David Baker
“Mis-translation of a Computationally Designed Protein Yields an Exceptionally Stable Homodimer: Implications for Protein Engineering and Evolution”
J. Mol. Biol. 362:1004-1024 (2006)
5. Jan Lipfert, Ian S. Millett, Sönke Seifert, and Sebastian Doniach
“A Sample Holder for Small-Angle X-ray Scattering Static and Flow Cell Measurements”
Rev. Sci. Instrum. 77:046108 (2006)
 This article was featured in *Vir. J. Bio. Phys. Res.* vol. 11 issue 8 (2006) and in *APS Science, the Advanced Photon Source Annual Report 2005*, p. 153-154 (2006)
4. Linda Columbus, Jan Lipfert, Heath Klock, Ian S. Millett, Sebastian Doniach, and Scott Lesley
“Expression, Purification, and Characterization of *Thermotoga maritima* α -Helical Membrane Proteins for Structure Determination”
Protein Sci. 15:1-15 (2006)
3. Bojan Zagrovic, Jan Lipfert, Erik J. Sorin, Ian S. Millett, Wilfred F. van Gunsteren, Sebastian Doniach, and Vijay S. Pande
“Unusual Compactness of a Polyproline type II Structure”
Proc. Natl. Acad. Sci. U.S.A. 102:11698-11703 (2005)
2. Jan Lipfert, Joel Franklin, Fang Wu, and Sebastian Doniach
“Protein Misfolding and Amyloid Formation for the Peptide GNNQQNY from Yeast Prion Protein Sup35: Simulation by Reaction Path Annealing”
J. Mol. Biol. 349:648-658 (2005)
1. Jan Lipfert, Jorge Llano, and Leif A. Eriksson
“Radiation-Induced Damage in Serine Phosphate - Insights into a Mechanism for Direct DNA Strand Breakage”
J. Phys. Chem. B 108:8036-8042 (2004)

Contributions to Books

5. Sebastian Doniach and Jan Lipfert
“**Small and Wide Angle X-ray Scattering of Biological Macromolecules and Their Complexes in Solution**”
Comprehensive Biophysics, 1:376-397 (2012)
4. Sebastian Doniach and Jan Lipfert
“**Use of Small Angle X-ray Scattering (SAXS) to Characterize Conformational States of Functional RNAs**”
Methods Enzymol. 469:237-251 (2009)
3. Jan Lipfert, Daniel A. Koster, Igor D. Vilfan, Susanne Hage, and Nynke H. Dekker
“**Single Molecule Magnetic Tweezers Studies of Type IB Topoisomerases**”
Methods in Mol. Biol. 582:71-89 (2009)
2. Igor D. Vilfan, Jan Lipfert, Daniel A. Koster, Serge G. Lemay, and Nynke H. Dekker
“**Magnetic Tweezers for Single-Molecule Experiments**”
P. Hinterdorfer and A. van Oijen (eds.), *Handbook of Single-Molecule Biophysics*, Springer (2009)
1. Jan Lipfert, Daniel Herschlag, and Sebastian Doniach
“**Riboswitch Conformations Revealed by Small-Angle X-ray Scattering**”
Methods in Mol. Biol. 540:141-59 (2009)

Other Publications: Teaching, Commentaries, Patents

11. Jan Lipfert and Nynke H. Dekker
“**De RNA-helix lijkt niet altijd op die van DNA**”
Nederlands Tijdschrift voor Natuurkunde, June (2015) (in Dutch)
10. Jan Lipfert
“**The Anti-Fraud Counselor**”, *TU Delta*, 6:15 (2012)
9. Jan Lipfert
“**Fraud!**”, *Kavli Newsletter*, 4:13 (2012)
8. Jan Lipfert
“**Will the top sectors go to Mars?**”, *Kavli Newsletter*, 3:11 (2011)
7. Jan Lipfert
“**Science in the Exponential Growth Phase**”, *Kavli Newsletter* 2:9 (2011)
6. Jan Lipfert
“**The Curious Use of Latin and Greek Antiquity in Dutch Academia**”, *Kavli Newsletter* 1:7 (2011)
5. Jan Lipfert, Jacob W.J. Kerssemakers, and Nynke H. Dekker
“**Method for determining one or more characterizing features of a macromolecule and an apparatus for carrying out said method.**”, *WO Patent* 2011162603 (2011), *US patent* 20130102083 (2013)
4. S. Menze, C. Menze, Jan Lipfert, B. Menze, and G. Harsch
“**Der Vorfahr aus der Bronzezeit**”, *Praxis der Naturwissenschaften - ChiS* 5 (59):6 (2010) (in German)
3. Jan Lipfert
“**The Newest Science not so new?**”, *TU Delta*, 5 (2010)
2. Jan Lipfert
Comment on “**Refueling**”, *Europhysics News* 39:37 (2009)
1. Jan Lipfert and Miriam Spering
“**Deutsches Hochschulwesen: Navigare necesse est?**”, *Ideenwettbewerb des CHE* (2003) (in German)

Talks at International Conferences

19. iPoLS *Physics of Living Systems* Annual Meeting, Arlington, VA, July 2015
18. The Crick Institute “Inspiring Careers” symposium, London, UK, May 2015
17. German Physical Society (DPG) meeting, Dresden, Germany, April 2014
16. Biophysical Society Meeting, San Francisco, CA, February 2014
15. International Summer School *Nicholas Cabrera*, Madrid, Spain, July 2013
14. Biophysical Society Meeting, Philadelphia, PA, February 2013
13. German Physical Society (DPG) meeting, Dresden, Germany, March 2011
12. Biophysical Society Meeting, “DNA, RNA Structure & Conformation” session, Baltimore, MD, March 2011
11. Biophysical Society Meeting, “Molecular Biophysics” subgroup, Baltimore, MD, March 2011
10. Zing Nucleic Acids Conference, Puerto Morelos, Mexico, November 2010
9. Gordon Research Conference on *Single Molecule Approaches to Biology*, Lucca, Italy, June 2010
8. Panelist *Early Careers Committee*, “Graduate Student to Postdoc Transition”, Biophysical Society Meeting, San Francisco, CA, February 2010
7. Small-Angle Scattering 2009 Conference, Oxford, UK, September 2009
6. Biophysical Society Meeting, Boston, MA, February 2009
5. Biophysical Society Meeting, “RNA Folding” session, Long Beach, CA, February 2008
4. Biophysical Society Meeting, “Single Molecule Biophysics I” session, Long Beach, CA, February 2008
3. SSRL and LCLS Users’ Meeting, Menlo Park, CA, October 2007
2. American Crystallographic Association meeting, Salt Lake City, UT, July 2007
1. Small-Angle Scattering 2006 conference, Kyoto, Japan, July 2006

Talks at National Conferences and Colloquia

25. Colloquium at Biozentrum Basel, Basel, Switzerland, November 2015
24. Biomolecular Optics Seminar, Munich, Germany, July 2015
23. “Münchener Physik Kolloquium” (TUM-LMU Physics Colloquium), Munich, Germany, December 2014
22. “Nanoday” Public Science Event, Munich, Germany, November 2014
21. “Physik Modern” Seminar, Munich, Germany, November 2014
20. Todai-LMU (Tokyo-Munich) “Cooperation in Physics” Workshop, Munich, Germany, October 2014
19. Panelist at the CeNS career event on “Dual Career Couples”, Munich, Germany, July 2014
18. NIM graduate program summer retreat, Tegernsee, Germany, June 2014
17. SFB 863 *Forces in Biomolecular Systems* Seminar, Munich, Germany, May 2014
16. CECAM Workshop on *Biological Molecules under Non-Natural Conditions*, Stuttgart, Germany, March 2014
15. “DNA node” Seminar, Munich, Germany, March 2014
14. CeNS Workshop 2013, Venice, Italy, September 2013
13. Colloquium at the Institute for Computational Physics, University of Stuttgart, Germany, May 2013
12. Molecular Biophysics Meeting, Veldhoven, The Netherlands, October 2011
11. “Forces in Biomolecular Systems” Symposium, Ringberg Castle, Germany, July 2011
10. Seminar at the Peter Grünberg Institute, Research Center Jülich, Germany, February 2011
9. Paris-Stanford Exchange Meeting, Paris, France, September 2010
8. Molecular Biophysics Meeting, Veldhoven, The Netherlands, September 2009
7. Structural Biology Seminar, Institut Pasteur, Paris, France, February 2009
6. Physics Colloquium, Reed College, Portland, OR, April 2007
5. Molecular Biophysics Seminar, Stanford University, CA, February 2007
4. Structural Biology Seminar, Institut Pasteur, Paris, France, March 2006
3. PPG meeting, Stanford University, CA, October 2005
2. Molecular Biophysics Seminar, Stanford University, CA, November 2004
1. Javits meeting, San Francisco, CA, April 2004

Poster Presentations (first author only)

20. Small-Angle Scattering conference, Berlin, Germany, September 2015
19. Single-Molecule Biophysics Conference, Aspen, CO, January 2013
18. Molecular Biophysics meeting, Veldhoven, The Netherlands, October 2012
17. Biophysical Society meeting, San Diego, CA, February 2012
16. Molecular Biophysics meeting, Veldhoven, The Netherlands, October 2010
15. Gordon Research Conference on *Single Molecule Approaches to Biology*, Lucca, Italy, June 2010
14. Biophysical Society meeting, San Francisco, CA, February 2010
13. Small-Angle Scattering 2009 conference, Oxford, UK, September 2009
12. Molecular Biophysics meeting, Veldhoven, The Netherlands, September 2008
11. Molecular Biophysics meeting, Veldhoven, The Netherlands, September 2008
10. Gordon Research Conference on *Single Molecule Approaches to Biology*, New London, NH, August 2008
9. RNA Society meeting, Berlin, Germany, August 2008
8. TOPO2008 meeting, Norwich, UK, July 2008
7. Biophysical Society meeting, Baltimore, MD, March 2007
6. Biomedical Computation at Stanford (BCATS) meeting, October 2006
5. Biomedical Computation at Stanford (BCATS) meeting, October 2005
4. Biophysical Society meeting in Long Beach, CA, February 2005
3. Biomedical Computation at Stanford (BCATS) meeting, October 2004
2. Biophysical Society meeting in Baltimore, MD, Januar 2004
1. Biomedical Computation at Stanford (BCATS) meeting, October 2003