

CURRICULUM VITAE – ILIA A. SOLOV'YOV, PH.D.

PERSONAL DATA Date and place of birth November 10, 1983; Leningrad, USSR
Citizenship German, Russian
Civil status Married to Dr. Vita Solovyeva
Children Vladimir Ilya Solovyev (born October 17, 2012)
Valery Ilya Solovyev (born July 30, 2015)

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RESEARCH INTERESTS I have a strong background in **theoretical** and **computational physics**, as well as **biophysics**. My research interests cover a broad range of questions on theory of biomolecules and smart inorganic materials. Of particular interest are those biological processes that trigger energy conversion into forms that are usable for chemical transformations and are quantum mechanical in nature. Such processes involve chemical reactions, light absorption, formation of excited electronic states, transfer of excitation energy, and transfer of electrons and protons in chemical processes. Equally intriguing are problems in nanophysics which focus on potential applications in nano- technology, material science and medicine. I employ various levels of theory, including classical and quantum molecular dynamics, Monte-Carlo, coarse grained methods and multiscale techniques; often it is crucial to go beyond the standard methodologies, in which case specialized methods and tools are being designed and developed in my group. Many of the simulations require high performance computing facilities, and throughout the years I have gained significant experience working with supercomputers and utilizing them for addressing problems of interest.

WORK EXPERIENCE

Carl von Ossietzky Universität Oldenburg
Institute of Physics, Oldenburg, Germany
Full Professor (W3) May 2026 –
Professor (W2) October 2019 – May 2026

University of Southern Denmark
Department of Physics, Chemistry and Pharmacy, Faculty of Science, Odense, Denmark
Associate Professor July 2014 – 2019
Assistant Professor October 2013 – June 2014

Paternity leave 2015 – 2016
2012 – 2013

University of Illinois at Urbana-Champaign
Beckman Institute for Advanced Science and Technology, Urbana, Illinois, USA
Beckman Postdoctoral Fellow 2010 – 2013

Johann-Wolfgang Goethe University
Frankfurt Institute for Advanced Studies, Frankfurt am Main, Germany
Postdoctoral Research Fellow 2008 – 2010

University of Illinois at Urbana-Champaign
Beckman Institute for Advanced Science and Technology, Urbana, Illinois, USA
Visiting scholar, one-month visits 2006, 2008 – 2010

Johann-Wolfgang Goethe University

Frankfurt International Graduate School for Science at the Frankfurt Institute for Advanced Studies, Frankfurt am Main, Germany

Graduate Researcher

2005 – 2008

EDUCATION

A.F. Ioffe Physical-Technical Institute, Russian Academy of Sciences

St. Petersburg, Russia

2009

Candidate of Sciences in Theoretical Physics (equivalent to Ph.D.)

Dissertation title: New approaches for the description of nanoscale systems on the example of atomic clusters, carbon nanotubes and fullerene-based nanowires

Advisor: Prof. Dr. Oleg V. Konstantinov

Johann Wolfgang Goethe University, Frankfurt am Main, Germany

2008

Ph.D. in Physics with Honors (summa cum laude)

Dissertation title: Magnetoreception mechanisms in birds – towards the discovery of the sixth sense

Advisor: Prof. Dr. h. c. mult. Walter Greiner

St. Petersburg State Polytechnical University, St. Petersburg, Russia

2006

Master of Sciences in Physics with Honors

Thesis title: Structure and properties of metallic and noble gas clusters

Johann Wolfgang Goethe University Frankfurt am Main, Germany

2004

Diploma in Physics with Honors

Thesis title: Ab initio and model description of atomic clusters

St. Petersburg State Polytechnical University St. Petersburg, Russia

2004

Bachelor of Sciences in Physics with Honors

Thesis title: Modeling of Lennard-Jones clusters

Lyceum “Physical-Technical High School”, Russian Academy of Sciences

St. Petersburg, Russia

2000

Elm-Wood School, London, United Kingdom

1995

Jacob Bruce Gymnasium №192, St. Petersburg, Russia

1990 – 1998

Elsa-Brandström School, Frankfurt am Main, Germany

1990 – 1992

GRANTS

Scientific Council of the NHR centers NHR@ZIB and NHR@Göttingen 2026

High performance computing grant (Core-hours 10,097,000)

German Research Foundation (DFG)

2026-2032

Exzellenzcluster 3051 NaviSense, Germany

PI: Henrik Mouritsen. (€ 50,744,000)

Co-applicant, my part: (€ 2,356,000)

European Commission

2026-2029

Marie Skłodowska-Curie Action, Doctoral Network MS-RADAM

Coordinator: Andrey Solov'yov. (€ 4,390,000)

Co-applicant, my part: (€ 581,000)

Scientific Council of the NHR centers NHR@ZIB and NHR@Göttingen 2025

High performance computing grant (Core-hours 9,840,000)

Scientific Council of the NHR centers NHR@ZIB and NHR@Göttingen 2024

- High performance computing grant (Core-hours 6,360,000)
- Bundesamt für Strahlenschutz** **2023**
 Research grant “Is radical-pair mechanism relevant for radiation protection?” (€ 464,000)
- German Research Foundation (DFG)** **2023-2027**
 Hyperpolarisation in molekularen Systemen, SFB/Transregio 386: HYP*MOL, Germany
 PI: Jörg Matysik. (€ 13,095,000)
 Co-applicant, my part: (€ 389,000)
- German Research Foundation (DFG)** **2023-2026**
 Magnetoreception and Navigation in Vertebrates, CRC 1372(2), Germany
 PI: Henrik Mouritsen. (€ 11,400,000)
 Co-applicant, my part: (€ 807,000)
- Ministry for Science and Culture of Lower Saxony** **2022**
 Collaborative Research grant “Dynamics in Nanostructures (DyNano)”, Germany
 PI: Christoph Lienau. (€ 2,436,000)
 Co-applicant, my part: (€ 174,000)
- Scientific Council of the NHR centers NHR@ZIB and NHR@Göttingen** **2023**
 High performance computing grant (Core-hours 16,405,000)
- European Cooperation in Science and Technology (COST)** **2021**
 COST Action CA20129: Multiscale Irradiation and Chemistry Driven Processes and Related Technologies
 Working Group Leader, Management Committee member (Germany)
- Norddeutscher Verbund für Hoch- und Höchstleistungsrechnen (HLRN)** **2022**
 High performance computing grant (NPL 1,200,000 eqv. € 312,000)
- Norddeutscher Verbund für Hoch- und Höchstleistungsrechnen (HLRN)** **2021**
 High performance computing grant (NPL 910,000 eqv. € 241,800)
- Ministry for Science and Culture of Lower Saxony** **2020**
 Collaborative Research grant “Simulations meet experiments on the nanoscale: opening up the quantum world to artificial intelligence (SMART)”, Germany
 PI: Caterina Cocchi. (€ 978,662)
 Co-applicant, my part: (€ 247,000)
- German Research Foundation (DFG)** **2020-2022**
 Magnetoreception and Navigation in Vertebrates, CRC 1372, Germany
 PI: Henrik Mouritsen. (€ 8,596,000)
 Co-applicant, my part: (€ 460,000)
- German Research Foundation (DFG)** **2019**
 Research Training group, “Molecular Basis of Sensory Biology”, GRK1885, Germany
 PI: Karl-Wilhelm Koch. (€ 7,571,000)
 Co-applicant, my part: (€ 222,000)
- Volkswagenstiftung** **2019**
 Lichtenberg Professorship, Germany. (€ 1,322,600)
- Danish council for independent research** **2018**
 Research grant, Denmark. (DKK 2,592,000)
- Danish council for independent research** **2017**

	Research grant, Denmark Co-applicant. PI: Jakob Kongsted. (DKK 7,813,002)	
	Danish e-Infrastructure Cooperation (DeIC) High performance computing grant (node/hrs 462,810 eqv. DKK 976,839)	2017
	Danish Ministry of Education Travel grant for a supervised student, Denmark student: Emil Sjulstok Rasmussen (DKK 200,000)	2017
	Danish e-Infrastructure Cooperation (DeIC) High performance computing grant (node/hrs 410,778 eqv. DKK 890,430)	2016
	SDU e-Science Centre Ph.D. scholarship grant (1/3), Odense, Denmark Co-applicant. PI: Himanshu Khandelia. (DKK 500,000)	2015
	Danish e-Infrastructure Cooperation (DeIC) High performance computing grant (node/hrs 284,812 eqv. DKK 627,393)	2015
	The Alfred Benzon Foundation Workshop organization grant, Copenhagen, Denmark. (DKK 49,420)	2015
	Lundbeck Foundation Young Investigator Grant 5 year starting grant, Copenhagen, Denmark. (DKK 10,000,000)	2014
	The Extreme Science and Engineering Discovery Environment (XSEDE) Supercomputer time allocation grant, USA Co-applicant. PI: David LeBar. (\$ 114,485)	2014
	Danish e-Infrastructure Cooperation (DeIC) High performance computing grant Co-applicant. PI: Hans Jørgen Aagaard Jensen. (DKK 792,000)	2013
	Beckman conference challenge proposal Symposium organization grant Co-applicant with Baoxing Xu. (\$ 10,000)	2013
HONOURS AND AWARDS	Universitätsgesellschaft Oldenburg e.V. (UGO) <i>University society Oldenburg</i> Award for excellent research, Oldenburg, Germany. (€5,000)	2020
	Frankfurter Förderverein für physikalische Grundlagenforschung <i>Frankfurt foundation for fundamental physical sciences</i> One of a kind award for interdisciplinary research on magnetoreception in birds and other animals, Frankfurt am Main, Germany. (€10,000)	2008
	Philipp Siedler-Wissenschaftspreis <i>Philipp Siedler science award</i> The best Diploma thesis award, Frankfurt am Main, Germany. (€1,000)	2006
	Soros foundation (ISSEP) award Laureate of the <i>Student of the Year</i> contest, St. Petersburg, Russia	2003, 2004
FELLOWSHIPS	Arnold and Mabel Beckman Foundation Beckman institute postdoctoral fellowship, Urbana, USA. (\$ 156,000)	2010 – 2013

Stiftung Polytechnische Gesellschaft **2008 – 2010**
The foundation “Stiftung Polytechnische Gesellschaft”
 Research fellowship, Frankfurt am Main, Germany. (€102,000)

Studienstiftung des deutschen Volkes **2003 – 2004**
Scholarship of the German nation
 Educational foundation, fellowship, Germany

TEACHING
EXPERIENCE
(COURSES)

Institute of Physics, Oldenburg, Germany
Lecturer: Introduction into Theoretical Physics, ~40 students, (15 ECTS). **SS23,24**
Lecturer: Thermodynamics and Statistical Physics, ~35 students, (10 ECTS). **WS22,23,24**
Lecturer: Advanced Quantum Mechanics, ~15 students, (5 ECTS). **WS20,21**
Lecturer: Multiscale Modelling of Molecular Systems, ~15 students, (2 ECTS). **WS19**
Lecturer: Introductory Quantum Mechanics, ~35 students, (10 ECTS). **SS20,21,22,25**
Lecturer: Computational Biophysics, ~20 students, (5 ECTS). **since SS20**

University of Southern Denmark

Department of Physics, Chemistry and Pharmacy, Faculty of Science, Odense, Denmark
Lecturer: Introductory Astronomy, ~10 students, (10 ECTS). **2019**
Lecturer: Computational Physics, ~20 students, (5 ECTS). **2017 – 2019**
Lecturer: Introductory Quantum Mechanics, ~25 students, (10 ECTS). **2015 – 2019**
Lecturer: Molecular Spectroscopy, ~30 students, (5 ECTS). **2014 – 2015**

MBN Research Center

Crowne Plaza, Edinburgh, United Kingdom
Co-organizer and tutor: Training course on computational methods for complex molecular systems **May 17 – 19, 2014**

Goethe University

Frankfurt Institute for Advanced Studies, Frankfurt am Main, Germany
Visiting Lecturer: Multi-center molecular systems, course for graduate and post-graduate researchers **2011**
Tutorial development: Computational methods in Meso-Bio-Nano Science **2004 – 2010**

Johann-Wolfgang Goethe University

Institute for Theoretical Physics, Frankfurt am Main, Germany
Teaching Assistant: theoretical physics courses in statistical mechanics, thermodynamics, and basics of quantum mechanics. **2003 – 2004**

SUPERVISION

With ongoing, **19** Bachelor students; **15** Masters students; **16** Ph.D. students; **13** Post-doctoral research associate; **4** Software developers;

SUMMARY OF
PUBLICATIONS

203 peer reviewed scientific publications since 2002 including 165 journal publications, 20 book chapters, 6 refereed conference proceedings, 5 theses, 7 monographs/books; designed and contributed to **29** journal and book covers.
 h-index of **39** with +6200 citations.
 URL: <http://scholar.google.com/citations?user=dKpz7QkAAAAJ&hl=en>

PROFESSIONAL
SERVICE

Management Experience

Institute of Physics, Oldenburg, Germany
Designated vice-speaker for the Excellence cluster “NaviSense” **2025 –**
Vice Institute director **2025 –**

Member of the natural sciences faculty council **2025 –**
Member of SFB1372 Executive Board **2023 –**
Chair of the physics bachelor's degree program **2021 – 2025**

University of Southern Denmark, Department of Physics, Chemistry and Pharmacy
Faculty of Science, eScience committee member **2018 – 2019**
Member of the departmental council **2016 – 2019**

Conference and Symposia Organization

Symposium on Animal navigation 2025: Moving beyond the sensory basis and mechanisms of animal navigation

Oldenburg, Germany, February 18 – 20, 2025

Symposium co-chair **2025**

The Sixth International Conference “Dynamics of Systems on the Nanoscale” and The Tenth International Symposium “Atomic Cluster Collisions” (DySoN-ISACC 2021)

Santa Margherita Ligure, Italy, October 18 – 22, 2021

Member of the Organizing Committee **2021**

International Conference “Dynamics of Systems on the Nanoscale” (DySoN)

Member of the international advisory committee **since 2018**

Fifth International Conference “Dynamics of Systems on the Nanoscale” (DySoN 2018)

Potsdam, Germany, October 8 – 12, 2018

Symposium co-chair **2018**

Oxford-Oldenburg-Odense (O3) annual symposium on magnetoreception

Middelfart, Denmark, March 15 – 17, 2018

Middelfart, Denmark, September 08 – 10, 2016

Odense, Denmark, June 17 – 18, 2015

Symposium chair **2015 – 2018**

“Hands-on” Workshop on Computational Biophysics

Odense, Denmark, October 12 – 16, 2015

Co-organizer **2015**

Symposium: “The Radical-Pair Mechanism as Magnetoreceptor Mechanism” at the 16th International Congress on Photobiology

Córdoba, Argentina, September 09, 2014

Symposium co-chair **2014**

Interdisciplinary Symposium on Advanced Nano/Biosystems: Design, Fabrication, and Characterization

Urbana, Illinois, USA, September 25 – 27, 2013

Symposium co-chair **2013**

International Conference “Dynamics of Systems on the Nanoscale” (DySoN 2010)

National Research Council, Rome, Italy, November 16 – 19, 2010

Member of the local organizing committee **2010**

International Symposium on atomic cluster collisions: structure and dynamics from the nuclear to the biological scale (ISACC)

Ann Arbor, Michigan, USA, July 14 – 18, 2009

St. Petersburg, Russia, June 3 – 7, 2008, Europhysics Conference

GSI, Darmstadt, Germany, July 19 – 23 2007, Europhysics Conference

Member of the local organizing committee **2007 – 2009**

Professional Affiliations

Theoretical Section of the Danish Chemical Society
Member **2017 – 2019**

American Chemical Society
Member **2017**

MBN Research gGmbH (www.mbnresearch.com)
share holder and co-founder **2016 – present**

PerpeVit ApS (www.perpevit.com)
share holder and co-founder **2019 – present**

SDU eScience Centre (escience.dias.sdu.dk)
Affiliated member **2014 – 2019**
Faculty of Science, eScience committee member **2018 – 2019**

Physicalisches Verein, Frankfurt am Main, Germany
Member **2006 – 2010**

SUMMARY OF PRESENTATIONS **144** presentations since 2003 including 80 invited presentations total (conferences, symposia, colloquia) and 5 invited general audience presentations.

PEER-REVIEW ACTIVITIES

Referee for 36 international journals

ACS Nano, ACS Omega, Applied Spectroscopy, Bioelectromagnetics, Biological Reviews, Biology Bulletin Reviews, Biophysical Journal, Biosensors, Carbon, Computational and Structural Biotechnology Journal, European Biophysics Journal, European Physical Journal D, Integrative Biology, Journal of Biophysics, Journal of Chemical Physics, Journal of Chemical Theory and Computation, Journal of Computational Chemistry, Journal of Computational Physics, Journal of Nanotechnology, Journal of Physical Chemistry, Journal of Physical Chemistry Letters, Journal of the American Chemical Society, Journal of Theoretical Biology, Journal of the Royal Society Interface, Nature Chemistry, Nature Materials, Nature Scientific Reports, Naturwissenschaften, Physical Chemistry Chemical Physics, Philosophical Transactions A, Physical Review E, Physical Review Letters, PLoS One, Proceedings of the National Academy of Sciences of the United States of America, Science Advances, Scientific Reports

Editorial activities

The European Physical Journal D, topical issue on “Dynamics of Systems on the Nanoscale”
Guest Editor: **2018 – 2020**

Scientific Reports (Nature Publishing Group)
Academic Editor: **2017 – present**

Plos One (Public Library of Science)
Academic Editor: **2014 – present**

Journal of Nanotechnology (Hindawi Publishing Corporation), special Issue on “Fullerene-related nanocarbons and their applications”
Guest Editor: **2011**

MAJOR

Marcus Elstner

Karlsruhe Institute of Technology, Germany

COLLABORATIONS

Tanja Gulder, Saarland University, Germany

Sharon Hammes-Schiffer	Princeton University, USA
Peter Hore	Oxford University, UK
Daniel Kattnig	Exeter University, UK
Himanshu Khandelia	University of Southern Denmark (SDU), Odense, Denmark
Karl-Wilhelm Koch	Oldenburg University, Germany
Jacob Kongsted	University of Southern Denmark (SDU), Odense, Denmark
Tomáš Kubař	Karlsruhe Institute of Technology, Germany
Miriam Liedvogel	Institut für Vogelforschung, Germany
Christoph Lienau	Oldenburg University, Germany
Wing-Yee Lui	Hong Kong University, China
Jörg Matysik	Leipzig University, Germany
Henrik Mouritsen	Oldenburg University, Germany
Andrey Solov'yov	MBN Research Centre, Germany
Joseph Takahashi	Texas University, USA
Jingjing Xu	University of Southern Denmark (SDU), Odense, Denmark

LANGUAGES

Russian (native), English (professional), German (C1), and Danish (B2)