

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

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**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)

**CONTACT INFORMATION** Institute of Physics Phone: +49-441-798-3817  
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26129 Oldenburg, Germany

**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  
*Professor* **October 2019 – present**

**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** 2009  
 St. Petersburg, Russia  
 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)** **2017**  
High performance computing grant (node/hrs 462,810 eqv. DKK 976,839)

**Danish Ministry of Education** **2017**  
Travel grant for a supervised student, Denmark  
student: Emil Sjulstok Rasmussen (DKK 200,000)

**Danish e-Infrastructure Cooperation (DeIC)** **2016**  
High performance computing grant (node/hrs 410,778 eqv. DKK 890,430)

**SDU e-Science Centre** **2015**  
Ph.D. scholarship grant (1/3), Odense, Denmark  
Co-applicant. PI: Himanshu Khandelia. (DKK 500,000)

**Danish e-Infrastructure Cooperation (DeIC)** **2015**  
High performance computing grant (node/hrs 284,812 eqv. DKK 627,393)

**The Alfred Benzon Foundation** **2015**  
Workshop organization grant, Copenhagen, Denmark. (DKK 49,420)

**Lundbeck Foundation Young Investigator Grant** **2014**  
5 year starting grant, Copenhagen, Denmark. (DKK 10,000,000)

**The Extreme Science and Engineering Discovery Environment (XSEDE)** **2014**  
Supercomputer time allocation grant, USA  
Co-applicant. PI: David LeBard. (\$ 114,485)

**Danish e-Infrastructure Cooperation (DeIC)** **2013**  
High performance computing grant  
Co-applicant. PI: Hans Jørgen Aagaard Jensen. (DKK 792,000)

**Beckman conference challenge proposal** **2013**  
Symposium organization grant  
Co-applicant with Baoxing Xu. (\$ 10,000)

#### HONOURS AND AWARDS

**Universitätsgesellschaft Oldenburg e.V. (UGO)** **2020**  
*University society Oldenburg*  
Award for excellent research, Oldenburg, Germany. (€5,000)

**Frankfurter Förderverein für physikalische Grundlagenforschung** **2008**  
*Frankfurt foundation for fundamental physical sciences*  
One of a kind award for interdisciplinary research on magnetoreception in birds and other animals, Frankfurt am Main, Germany. (€10,000)

**Philipp Siedler-Wissenschaftspreis** **2006**  
*Philipp Siedler science award*  
The best Diploma thesis award, Frankfurt am Main, Germany. (€1,000)

**Soros foundation (ISSEP) award** **2003, 2004**  
Laureate of the *Student of the Year* contest, St. Petersburg, Russia

#### FELLOWSHIPS

**Arnold and Mabel Beckman Foundation** **2010 – 2013**  
Beckman institute postdoctoral fellowship, Urbana, USA. (\$ 156,000)

**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 **200** peer reviewed scientific publications since 2002 including 162 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 **38** with +6000 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 35 international journals

ACS Nano, 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)