

Pavel Gurikov

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Other background information

Family status: married, two kids

Nationality: Germany

Permanent residency: Germany

Languages: English: full professional proficiency; German: full professional proficiency; Russian: native proficiency

1. Basic information: Education and degrees

2010 **Ph.D. in Chemical Engineering:** Mendeleev University Of Chemical Technology – Russia
2006 **Diploma (Physical chemistry):** Lomonosov Moscow State University – Russia
average note 4.68 out of 5.00 (5 is the highest note, 1 is the lowest note)

2. Research and scientific activities

Experience in research and other scientific activities

2017 – to date **Junior Professor:** Hamburg University of Technology, Hamburg (TUHH) – Germany
Head of an independent research group. Main duties: elaboration of new research directions, teaching, funding acquisition, supervision of doctoral, master and bachelor students, lab management, support and professional development of visiting scholars

2021 – to date **Co-Founder:** aerogel-it GmbH
Major business activities: large-scale manufacturing of high-performance porous materials from non-food biomass and waste streams from agriculture, forestry and marine environments <https://www.aerogel-it.de/>

2019 – to date **Departmental Deputy Dean for international affairs,** TUHH
Responsibilities: Assistance for international and exchange students with application, selection and recognition of studies abroad; continuous contacts with partner universities; substantive assessment of international cooperation contracts within the framework of ERASMUS+, DAAD and other funding agencies

2018 – to date **Co-Founder, Chief Research Officer:** Entrepreneurial Company Aerogellex
Major business activities: equipment design for supercritical drying process, consultancy

2013 – to date **Leader of Scientific Group “Nanoporous Materials”:** Hamburg University of Technology, Hamburg (TUHH) – Germany
Main duties: scientific leadership of a group of 10 doctoral students, own research, group and lab management, supervision of master and bachelor students

2012 – 2013 **Postdoctoral internship:** Hamburg University of Technology, Hamburg – Germany
Supported by a scholarship of the German Academic Exchange Service (DAAD)

2008 – 2012 **Senior Lecturer** at Mendeleev University of Chemical Technology and at Technical University of Communications and Informatics – Russia

2006 – 2010 **Ph.D. student:** Mendeleev University Of Chemical Technology – Russia

2004 – 2006 **Chemistry school teacher** in a secondary school in Moscow, Russia

Significant publications

Publication statistics as of Jan 2025:	number of peer-reviewed papers (international): 96 h-index: (Scopus/Google Scholar): 31 / 34 number of citations (Scopus/Google Scholar): 3380 / 4231 over 60
Conferences	1 (published by Cambridge University Press in 2021)
Book	3
Book chapters	1
Editorial	

Ten most important publications:

1. Depta, P.N., **Gurikov, P.**, Schroeter, B., Forgács, A., Kalmár, J., Paul, G., Marchese, L., Heinrich, S., Dosta, M. DEM-Based Approach for the Modeling of Gelation and Its Application to Alginate. *J. Chem. Inf. Model* **2022**, 62, 49–70.
2. Abdallah, M.M., Müller, S., González de Castilla, A., **Gurikov, P.**, Matias, A.A., Bronze, M. do R., Fernández, N.. Physicochemical Characterization and Simulation of the Solid–Liquid Equilibrium Phase Diagram of Terpene-Based Eutectic Solvent Systems. *Molecules* **2021**, 26, 1801.
3. Batista, M. P.; Gonçalves, V. S. S.; Gaspar, F. B.; Nogueira, I. D.; Matias, A. A.; **Gurikov, P.** Novel Alginate-Chitosan Aerogel Fibres for Potential Wound Healing Applications. *International Journal of Biological Macromolecules* **2020**, 156, 773–782.
4. Rege, A.; Ratke, L.; Külcü, İ. D.; **Gurikov, P.** Stiffening of Biopolymer Aerogel Networks upon Wetting: A Model-Based Study. *Journal of Non-Crystalline Solids* **2020**, 531, 119859.
5. **Gurikov, P.**; Raman, S. P.; Griffin, J. S.; Steiner, S. A.; Smirnova, I. Solvent Exchange in the Processing of Biopolymer Aerogels: Current Status and Open Questions. *Ind. Eng. Chem. Res.* **2019**, 58 (40), 18590–18600.
6. Dosta, M.; Jarolin, K.; **Gurikov, P.** Modelling of Mechanical Behavior of Biopolymer Alginate Aerogels Using the Bonded-Particle Model. *Molecules* **2019**, 24 (14), 2543.
7. **Gurikov, P.**; Smirnova, I. Amorphization of Drugs by Adsorptive Precipitation from Supercritical Solutions: A Review. *The Journal of Supercritical Fluids* **2018**, 132, 105–125.
8. Smirnova, I.; **Gurikov, P.** Aerogels in Chemical Engineering: Strategies Toward Tailor-Made Aerogels. *Annual Review of Chemical and Biomolecular Engineering* **2017**, 8 (1), 307–334.
9. **Gurikov, P.**; Kolnoochenko, A.; Golubchikov, M.; Menshutina, N.; Smirnova, I. A Synchronous Cellular Automaton Model of Mass Transport in Porous Media. *Computers & Chemical Engineering* **2016**, 84, 446–457.
10. **Gurikov, P.**; P. Raman, S.; Weinrich, D.; Fricke, M.; Smirnova, I. A Novel Approach to Alginate Aerogels: Carbon Dioxide Induced Gelation. *RSC Advances* **2015**, 5 (11), 7812–7818.

Research assessments and awards

Public funding as principal investigator:

- ca. 560 k€ acquired in total from German Research Foundation (DFG), German Academic Exchange Service (DAAD) and Forschungszentrum Medizintechnik Hamburg (FMTHH)
- 600 k€ for direct financing of my current position (Jun.-Prof. + one position for PhD student)

Awards:

- Professor Siegfried Peter Prize for pioneering research work in high-pressure process engineering, 2019
- Top peer reviewer from Clarivate Web of Science, 2019
- ETPN Nanomedicine Award (as a co-founder of start-up company *Aerogellex*), 2017
- Postdoctoral scholarship from German Academic Exchange Service (DAAD), 2012
- School-level competitions in chemistry, 1998 – 1999

Activities in the scientific projects

Project participation:

- Principal investigator in two DFG projects (2018 – ...)
- Principal investigator in one DAAD project (2019 – ...)
- Principal investigator in one project funded by Forschungszentrum Medizintechnik Hamburg (2020 – ...)
- EU project “Nanohybrids” under industrial leadership of BASF. My role: research, reporting, scientific coordination (2015 – 2019)
- Scientific co-worker in three SPP DFG projects. My role: research, reports, proposals for follow-up calls, supervision of undergraduates (2012 – 2017)
- Two personnel exchange projects with Portugal funded by DAAD. My role: research, reporting, resource management, supervision of undergraduates (2013 – 2014)

Editor	<ul style="list-style-type: none"> • Guest and handling editor in special issues, Open access journal <i>Gels</i> (2018 – to date) • <i>Journal of Supercritical Fluids</i>: guest editor for a special issue (2018 – 2019)
Reviewer	<ul style="list-style-type: none"> • Reviewer for over 25 peer-review journals (incl. <i>Nanoscale</i>, <i>Industrial & Engineering Chemistry Research</i> and <i>Journal of Supercritical Fluids</i>), over 170 reviews in total. Awarded with a certificate <i>Top peer reviewer 2019</i>. • reviewer for DFG (since 2020); reviewer for the DAAD (since 2021); reviewer for Netherlands Organization for Health Research and Development (since 2023).
Patents	Granted: WO2015177081, WO2018189366; four applications pending
Invited speaker:	International Polymer Characterization Forum Poly-Char (online, 2021), Don Supercritical (Rostov-on-Don, 2019) 14 th European Meeting on Supercritical Fluids (Marseille, 2014)
Major scientific conferences:	Materials Research Society Spring Meeting (Phoenix, USA); V Iberoamerican Conference on Supercritical Fluids, Campinas (Brazil), International and European meetings on Supercritical Fluids
Chair at conferences	Scientific Committee member of V Iberoamerican Conference on Supercritical Fluids, Campinas (Brazil); Moderator at the International Youth Summer School "Aerogels: from laboratory to industry" (Moscow); Session chair 3rd and 4th International Seminar on Aerogels (France 2016, Germany 2018)
Memberships	<ul style="list-style-type: none"> • member of the European Society of Engineering Education (since 2019) • editorial board member of the open access journal <i>Gels</i> • advisory board member of the peer-reviewed open access journal <i>Sci</i>

3. Teaching and supervision

Experience of undergraduate and postgraduate teaching and supervision

Curricular activities:

2020 – ...	<i>Class Unit Operations for bio-related Systems</i> : lectures and project-based learning, TUHH
2020 – ...	Practical course <i>Thermische Grundoperationen</i> , in German
2016 – ...	<i>Class Thermodynamics and Kinetics of the Solid state</i> : problem-centered lectures as a part of elective course <i>Modeling of granular materials</i> , TUHH
2011 – 2012	<i>Class Transport phenomena in disordered media</i> : small-group lectures, Mendeleev University Of Chemical Technology – Russia
2008 – 2012	Two compulsory courses: <i>General/physical chemistry</i> and <i>Chemistry of electronic materials</i> : large-group lectures (up to 150 students) and tutorials, <i>Technical University of Communications and Informatics – Russia</i>
2004 – 2006	Chemistry school teacher: general, inorganic and organic chemistry, Russia

Extra-curricular activities:

annually: since 2015	1-day workshop "Statistical Methods for Analysis of Engineering Data" for doctoral and master students, organizer and moderator, TUHH
biannually, since 2016	Speaker at the International Summer School on Aerogels (Cologne, Germany)
annually, since 2017	Mentor at the High Pressure Summer School (a two-week intensive summer school for doctoral candidates on the fundamentals and engineering aspects of high pressure technology), Maribor/Graz (Slovenia/Austria)
2017	Tutorial speaker at MRS Spring Meeting (Phoenix, USA)

Supervision:

2017 – ...	Two doctoral students under supervision and one under co-supervision
2010 – ...	20 Master theses
2012 – ...	7 Bachelor theses
2012 – ...	Project works/internships/scientific assistants: >25 students

External examiner (PhD level)

Isabella Jung, TUHH (2022); Sarah Fitzpatrick, University of Canterbury (2021); Julien Jaxel, University of Natural Resources and Life Sciences (Austria, 2020); Dr. Isaac Cuadra Mendoza, Complutense University of Madrid (Spain, 2019); Dr. Ana Najwa, Valladolid University (Spain, 2016)