

Curriculum vitae- Dr.rer.nat. Aida Naghilou

Education

2018	Dr.rer.nat , Physical Chemistry, University of Vienna, Austria
2014	MSc , Chemistry, University of Vienna, Austria

Languages

Fluent	English, German, Persian
Reading skills	Dutch

Positions Held

12/2024-Present	Postdoctoral researcher , Medical University of Vienna, Vienna, Austria
06/2023-11/2024	Postdoctoral researcher , Leiden University, Leiden, The Netherlands
03/2019-05/2023	Postdoctoral researcher , Medical University of Vienna, Vienna, Austria
08/2018-02/2019	Senior lecturer , University of Vienna, Vienna, Austria
04/2014-05/2018	University assistant (PhD student) , University of Vienna, Vienna, Austria

Funding

2025-2026	Grant , Viennese Hochschuljubiläum funds, principal investigator
2020-2025	Grant , Austrian Science Fund, co-author

Awards and Esteem Factors

Since 2025	Grant reviewer for the German Research Foundation (DFG)
Since 2023	Grant reviewer for the Dutch Research Council (NWO)
2023	Marion Gröger Award , Medical University of Vienna, Austria
2022	Best research proposal award , Society for Plastic Surgery Research, Austria
2022	Best presentation award , Plastic Surgery Research Council, Canada
Since 2021	Vice president of the Erwin Schrödinger Society for Nanosciences, Austria
2020	Best paper award , Plastic Surgery Research Council, Canada
2016	Graduate student award , European Materials Research Society, France
2015	Bunsen book award , German Bunsen Society for Physical Chemistry, Germany

Selected Collaborators

Prof. Ellen Backus, University of Vienna, Austria

Assoc. Prof. Oscar Bomati-Miguel, University of Cadiz, Spain

Prof. Alexander Bismarck, University of Vienna, Austria

Prof. Micha Drukker, Leiden University, The Netherlands

Prof. Helga Lichtenegger, BOKU University Vienna, Austria

Prof. Anna Rising, Swedish University of Agricultural Sciences, Sweden

Dr. Christian Riekkel, The European Synchrotron Radiation Facility, France

Prof. Fritz Vollrath, University of Oxford, UK

Prof. Leonid V. Zhigilei, University of Virginia USA

Organization of Scientific Meetings

2015-2025	6th, 7th, 8th, 9th and 10th Conference on Applications of Lasers in Materials Science , Mauterndorf, Austria
2023	BIO-AFM Workshop , Leiden University, Leiden, The Netherlands
2016-2023	2nd, 3rd, 4th, and 5th Erwin Schrödinger Symposium , Austria

Communication and Outreach

2025	KinderUni
2021-2025	MINT Tank, Dr. Hans Riegel foundation (yearly presentations)
2024	Soroptimist Austria
2021-present	Young science ambassador of the Agency for Education and Internationalisation
2021-2023	Brain Awareness Week
2022	Online magazine of Vienna Technical Museum, BioInspiration
2022	Long night of research
2021	Pint of science

Selected Teaching and Development Training

Medical education certificate: Courses in problem-based learning, e-didactics, presentation techniques, peer learning, research-led and goal-oriented teaching

Program stepwise: One year-long career coaching and development initiative

Program mentoring: One year-long structured mentoring initiative for academic growth

Thesis supervision training: Courses on motivating students, mentoring, legal/ethical aspects

Science communication: Bringing research to the media

Teaching in Higher Education

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Research Example in Modern Methods of Materials Chemistry												
Physical-Chemical Laboratory Practical Course												
Research Example Nanotechnology at Interfaces												
Research Example Femto- and Nano-Technology at Interfaces												
Research Project on Surfaces and Interfaces												
Thesis Seminar: Tissue Regeneration: From Bench to Bedside												
Journal Club: Tissue Regeneration – From Bench to Bedside												
Recent Advances in Peripheral Nerve Tissue Engineering												
Research Project Laser Spectroscopy and Molecular Symmetry												
Electron Microscopy of Biological Samples												
Introduction to Molecular and Cell Biological Work												
The 3P Interactive Journal Club: Poster, Pitch, Peer review												
Imaging Methods in Biomedical Engineering and Tissue Regeneration												

(CO-)Supervision of Students

PhD student

- Sarah Stadlmayr, 2021-2024, Medical University of Vienna

MSc & Medical Diploma students

- Dilan Öztürk, 2025 (ongoing), Medical University of Vienna
- Manuel Hofmann, 2023, University of Vienna
- Lena Pötschacher, 2021, University of Vienna
- Sebastian Milla, 2019, University of Natural Resources and Life Sciences
- Ana Subotic, 2018, University of Vienna

BSc students

- Mila Bölger, 2024, Leiden University
- Jing Feng, 2024, Leiden University
- Aia Laschein, 2020, University of Vienna

Publication List

Number of peer-reviewed publications: 24

Number of first-author publications: 8

Number of corresponding-author publications: 8

<https://scholar.google.com/citations?user=iFycYToAAAAJ&sortby=pubdate>

*: Corresponding author

1. **A. Naghilou**, Tom M.J. Evers, O. Armbruster, V. Satarifard, A. Mashaghi
Synthesis and Characterization of Phase-Separated Extracellular Condensates in Interactions with Cells
Chemical Engineering Journal, 518, 16455 (2025)
DOI: 10.1016/j.cej.2025.164551
2. F. Millesi, S. Mero, S. Rihl, S. Steinwenter, S. Stadlmayr, A. Borger, P. Supper, M. Haertinger, L. Ploszczanski, G. Sinn, **A. Naghilou**, L. Semmler, C. Radtke
Impact of Conduit-Filling Interactions on the Efficacy of Fibre and Hydrogel Fillers in Nerve Conduits
iScience, 28, 113150 (2025)
DOI: 10.1016/j.isci.2025.113150
3. **A. Naghilou**, O. Armbruster, A. Mashaghi
Scanning Probe Microscopy Elucidates Gelation and Rejuvenation of Biomolecular Condensates
Cell Reports Physical Science, 6, 102430, (2025)
DOI: 10.1016/j.xcrp.2025.102430
4. K. Peter, S. Stadlmayr, **A. Naghilou**, L. Ploszczanski, M. Hofmann, C. Riekkel, J. Liu, M. Burghammer, C. Gusenbauer, J. Konnerth, H. C. Schniepp, H. Rennhofer, G. Sinn, C. Radtke, H. C. Lichtenegger
Exploring the Unique Properties and Superior Schwann Cell Guiding Abilities of Spider Egg Sac Silk
ACS Applied Bio Materials, 8, 1307 (2025)
DOI: 10.1021/acsabm.4c01587
5. S. Stadlmayr, A. Mautner, M. Bacher, K. Peter, A. Mentler, S. Schulz, H. Lichtenegger, L. Brecker, A. Bismarck, **A. Naghilou***, C. Radtke
Holistic Analysis of Material Properties in Phylogenetically Diverse Spider Silks and Their Influence on Cell Adhesion
Advanced Functional Materials, 2145945 (2024)
DOI: 10.1002/adfm.202415945
6. A. Rad, L. Weigl, B. Steinecker-Frohnwieser, S. Stadlmayr, F. Millesi, M. Haertinger, A. Borger, P. Supper, L. Semmler, S. Wolf, **A. Naghilou**, T. Weiss, HG. Kress, C. Radtke
Nuclear Magnetic Resonance Treatment Induces β NGF Release from Schwann Cells and Enhances the Neurite Growth of Dorsal Root Ganglion Neurons In Vitro
Cells, 13, 1544, (2024)
DOI: 10.3390/cells13181544

7. M.P. Jones, Q. Jiang, A. Mautner, **A. Naghilou**, A. Prado-Roller, M. Wolff, T. Koch, V. Archodoulaki, A. Bismarck
Fungal Carbon: A Cost-Effective Tunable Network Template for Creating Supercapacitors
Global Challenges, 2300315 (2024)
DOI: 10.1002/gch2.202300315

8. S. Stadlmayr, K. Peter, F. Millesi, A. Rad, S. Wolf, S. Mero, M. Zehl, A. Mentler, C. Gusenbauer, J. Konnerth, H. C. Schniepp, H. Lichtenegger, **A. Naghilou***, C. Radtke
Comparative Analysis of Various Spider Silks in Regard to Nerve Regeneration: Material Properties and Schwann Cell Response
Advanced Healthcare Materials, 2302968 (2023)
DOI: 10.1002/adhm.202302968

9. **A. Naghilou***, K. Peter, F. Millesi, S. Stadlmayr, A. Rad, L. Semmler, P. Supper, L. Ploszczanski, J. Liu, M. Burghammer, C. Riekel, A. Bismarck, E. H. G. Backus, H. Lichtenegger, C. Radtke
Insights into the mechanical properties of dragline spider silk affecting Schwann cell migration
International Journal of Biological Macromolecules, 244, 125398 (2023)
DOI: 10.1016/j.ijbiomac.2023.125398

10. F. Millesi, S. Mero, L. Semmler, A. Mann, S. Stadlmayr, A. Borger, P. Supper, M. Haertinger, L. Ploszczanski, U. Windberger, T. Weiss, **A. Naghilou***, C. Radtke
A synergy of laminin and strain-stiffening in hydrogels promotes directed migration of neural cells
ACS Applied Materials & Interfaces, 15, 12678 (2023)
DOI: 10.1021/acsami.2c20040

11. L. Semmler, **A. Naghilou**, F. Millesi, S. Wolf, A. Mann, S. Stadlmayr, S. Mero, L. Ploszczanski, L. Greutter, A. Woehrer, E. Gyori, F. Vollrath, T. Weiss, C. Radtke
Silk-in-silk nerve guidance conduits enhance regeneration in a rat sciatic nerve injury model
Advanced Healthcare Materials, 12, 2203237 (2023)
DOI: 10.1002/adhm.202203237

12. F. Bergmann, S. Stadlmayr, F. Millesi, M. Zeitlinger, **A. Naghilou***, C. Radtke
The properties of native Trichonephila dragline silk and its biomedical applications
Biomaterials Advances, 140, 213089, (2022)
DOI: 10.1016/j.bioadv.2022.213089

13. A. Mann, B. Steinecker-Frohnwieser, **A. Naghilou**, F. Millesi, P. Supper, L. Semmler, S. Wolf, L. Marinova, L. Weigl, T. Weiss, C. Radtke
Nuclear Magnetic Resonance Treatment Accelerates the Regeneration of Dorsal Root Ganglion Neurons in vitro
Frontiers in cellular neuroscience, 16, 859545 (2022)
DOI: 10.3389/fncel.2022.859545

14. **A. Naghilou***, O. Bomati-Miguel, A. Subotic, R. Lahoz, M. Kitzler-Zeiler, C. Radtke, M. A. Rodríguez, W. Kautek
Femtosecond laser generation of bimetallic oxide nanoparticles with potential X-ray absorbing and magnetic functionalities for medical imaging applications
Ceramics International, 47, 29363 (2021)
DOI: 10.1016/j.ceramint.2021.07.103
15. F. Millesi, T. Weiss, A. Mann, M. Haertinger, L. Semmler, P. Supper, D. Pils, **A. Naghilou**, C. Radtke
Defining the regenerative effects of native spider silk fibers on primary Schwann cells, sensory neurons, and nerve-associated fibroblasts
The FASEB journal, 35, 21196, (2021)
DOI: 10.1096/fj.202001447R
16. **A. Naghilou***, L. Pöttschacher, F. Millesi, A. Mann, P. Supper, L. Semmler, T. Weiss, E. H. G. Backus, C. Radtke
Correlating the secondary protein structure of natural spider silk with its guiding properties for Schwann cells
Material science and engineering C, 116, 111219, (2020)
DOI: 10.1016/j.msec.2020.111219
17. R. Lahoz, **A. Naghilou**, W. Kautek, O. Bomati-Miguel
Study of the surface physicochemical alterations and incubation phenomena induced on iron targets by nanosecond pulsed laser ablation in liquids: Effect on productivity and characteristics of the synthesized Nanoscale zero-Valent iron (nZVI) particles
Applied Surface Science, 511, 145438, (2020)
DOI: 10.1016/j.apsusc.2020.145438
18. **A. Naghilou***, M. He, J.S. Schubert, L.V. Zhigilei, W. Kautek
Femtosecond laser generation of microbumps and nanojets on single and bilayer Cu/Ag thin films
Physical Chemistry Chemical Physics, 21, 11846 (2019)
DOI: 10.1039/C9CP02174D
19. M. Pfaffeneder-Kmen, I. Falcon Casas, **A. Naghilou**, G. Trettenhahn, W. Kautek
A Multivariate Curve Resolution evaluation of an in-situ ATR-FTIR spectroscopy investigation of the electrochemical reduction of graphene oxide
Electrochimica Acta, 255, 160 (2017)
DOI: 10.1016/j.electacta.2017.09.124
20. **A. Naghilou**, O. Armbruster, W. Kautek
Femto- and nanosecond pulse laser ablation dependence on irradiation area: the role of defects in metals and semiconductors
Applied Surface Science 418, 487–490 (2017)
DOI: 10.1016/j.apsusc.2016.12.141

21. O. Armbruster, **A. Naghilou**, M. Kitzler, W. Kautek
Spot size and pulse number dependence of femtosecond laser ablation thresholds of silicon and stainless steel
Applied Surface Science 396, 1736–1740 (2017)
DOI: 10.1016/j.apsusc.2016.11.229
22. M.V. Shugaev, C. Wu, O. Armbruster, **A. Naghilou**, N. Brouwer, D.S. Ivanov, T.J.- Y. Derrien, N.M. Bulgakova, W. Kautek, B. Rethfeld, L.V. Zhigilei
Fundamentals of ultrafast laser-material interaction
MRS Bulletin 41, 960-968 (2016)
DOI: 10.1557/mrs.2016.274
23. O. Armbruster, **A. Naghilou**, H. Pöhl, W. Kautek
In-situ and non-destructive focus determination device for high-precision laser applications
Journal of Optics 18, 095401 (2016)
DOI: 10.1088/2040-8978/18/9/095401
24. **A. Naghilou**, O. Armbruster, M. Kitzler, W. Kautek
Merging spot size and pulse number dependence of femtosecond laser ablation thresholds: Modelling and demonstration with high impact polystyrene
Journal of Physical Chemistry C 119, 22992-22998 (2015)
DOI: 10.1021/acs.jpcc.5b07109