Curriculum vitae - Dr.rer.nat. Aida Naghilou

Personal Information

Name	Naghilou, Aida
Position	Post-doctoral researcher
	Medical University of Vienna
	Department of Plastic, Reconstructive and Aesthetic Surgery
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Education

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

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

2026-2027	**Austria Wirtschaftsservice (aws)**, Principal Investigator
2025-2027	**Hochschuljubiläumsfonds of City of Vienna**, Principal Investigator
2021-2023	**Austrian Society for Plastic, Reconstructive, and Aesthetic Surgery**, Principal Investigator

Awards and Honors

2023	**Marion Gröger award**, Medical University of Vienna, Austria
2022	**Best presentation award**, Plastic Surgery Research Council, Canada
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

Academic Service

2026	**PhD thesis external examiner**, Aalto University, Finland
2025	**Session chair**, Women in Chemical Engineering event, University of Vienna
Since 2021	**Vice president**, Erwin Schrödinger Society for Nanosciences
2018-2022	**Elected alumni representative**, PRO SCIENTIA interdisciplinary scholarship and research network

Peer Review Activities

Grants	German Research Foundation (DFG) Dutch Research Council (NWO)
Journals (selected)	Advanced Materials, Advanced Functional Materials, Advanced Healthcare Materials, Acta Biomaterialia, International Journal of Biological Macromolecules, Advanced NanoBiomed Research, Materials Today Bio, ACS Biomaterials Science & Engineering

Organization of Scientific Meetings

2016-2026	**2nd- 7th Erwin Schrödinger Symposium,** Austria
2023	**BIO-AFM Workshop,** Leiden, The Netherlands
2015-2025	**6th- 10th Conference on Applications of Lasers in Materials Science**, Austria

Science Communication and Outreach

2025	**Austrian Ministry of Health**
2025	**KinderUni**
2024	**Soroptimist Austria**
2022	**Magazine of Vienna Museum of Science and Technology,** BioInspiration
2022 and 2026	**Long night of research**
2021-2025	**MINT Tank, Dr. Hans Riegel foundation** (annual lectures)
2021-present	**Young science ambassador,** Agency for Education and Internationalisation
2021, 2022	**Brain Awareness Week**
2021	**Pint of science**

Selected Pedagogical and Development Training

Medical education certificate (MLW), Program stepwise, Program female mentoring, Thesis supervision training, Science communication

Teaching in Higher Education (Only MedUni Vienna)

- Journal Club and Progress Report
- Thesis Seminar and Journal Club: Tissue Regeneration - From Bench to Bedside
- Recent Advances in Peripheral Nerve Tissue Engineering
- 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
- Problem-Oriented Learning (POL) 2. Semester
- Science and Medicine (SSM 2) Elective Part

Supervision of Students (Only MedUni Vienna)

PhD student

- Sarah Stadlmayr, 2021-2024

Medical Diploma students

- Niklas Ebel, 2026- ongoing
- Dilan Öztürk, 2025-2026

Publication List

*: Corresponding author

1. **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

2. **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

3. 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

4. **A. Naghilou,** A. Mashaghi
   Scanning Probe Microscopy for Rheological Analysis of Biomolecular Condensates
   STAR Protocols, 6, 104170 (2025)
   DOI: 10.1016/j.xpro.2025.104170

5. K. Peter, S. Stadlmayr, **A. Naghilou**, L. Ploszczanski, M. Hofmann, C. Riekel, 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

6. 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

7. 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 ßNGF Release from Schwann Cells and Enhances the Neurite Growth of Dorsal Root Ganglion Neurons In Vitro
Cells, 13, 1544, (2024)
DOI: 10.3390/cells13181544

8. 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

9. 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

10. **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

11. 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

12. 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

13. 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

14. 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

15. **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

16. 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

17. **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

18. 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

19. **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

20. 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

21. **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

22. 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

23. 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

24. 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

25. **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