
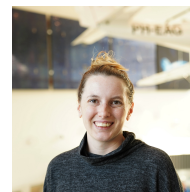


Sarah Schyck



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 <https://sschyck.github.io>






I am a materials scientist with a multidisciplinary background spanning nanomaterials, high-pressure physics, and colloidal synthesis. My doctoral research focused on the development of magnetic colloids using wet chemistry techniques. Currently, I am a postdoctoral researcher exploring biohybrid materials made with and from fungal composites, combining natural architecture with synthetic design. My work bridges soft matter, biomaterials, and sustainable fabrication.



Employment

- Nov 2023 – Current  **Postdoctoral Researcher at TU Delft, NLD**
Led research on living composites and microscale investigation of fungal signaling. Mentored PhD and MSc students, guiding experimental design and data analysis.
- Jan 2016 – July 2016  **ORAU and LSE Intern at Savannah River National Lab, USA**
Synthesized and characterized noble metal nanoparticles, studying their nucleation and growth mechanisms.

Education

- May 2019 – Sep 2023  **PhD in Chemical Engineering, TU Delft, NLD**
Thesis title: *Anisotropic and Magnetic Microparticles: Preparation and Out-of-Equilibrium Assembly*
- Sep 2016 – May 2018  **M.Sc. in Physics, University of Nevada, Las Vegas, USA**
Thesis title: *Studies of Inner-shell Chemistry of Mercury Based Compounds under Extreme Conditions*. DOI: 10.34917/14279172
- Sep 2012 – Dec 2015  **B.S. in Physics, University of Georgia, USA**
Projects: *Effect of Organic Hole Scavengers on the Photochromism of Bi₂WO₆* and *Growth of Cu nanofilms on polystyrene bead mono layer substrates by means of oblique angle physical vapor deposition*.

Teaching Experience

- Sep 2019 – Sep 2023  **Graduate Teaching Assistant at TU Delft, Delft, Netherlands**
· Taught Molecular Transport Phenomena and Advanced Interfacial Engineering.
· Supervised B.Sc. and M.Sc. thesis projects, focusing on developing students' modeling and experimental skills.
- Jan 2017 – May 2018  **Graduate Teaching Assistant at University of Nevada, Las Vegas, U.S.**
Two introductory physics laboratory sections per semester: non-calculus based physics I and calculus based electromagnetism.

Skills

- **Material Characterization:** Proficient in a wide range of techniques including XRD, SAXS, SEM, TEM, spectroscopy (Far-, Mid-, and FT-IR, UV-Vis, and Raman), and optical microscopy methods.
- **Leadership & Mentoring:** Skilled in guiding and mentoring students and junior researchers, fostering a collaborative and productive research environment.
- **Data Analysis & Visualization:** Advanced proficiency in Python, MatLab, and software specific data analysis tools. Experienced in physics-based models for material characterizations.
- **Communication:** Effective in summarizing complex information and engaging with the scientific community through presentations at international conferences and a leading role in manuscript publication.

Selected Publications

Journal Articles

- 1 Sarah Schyck, Madam, N. R. & Rossi, L. (2025). Reshapable magnetic particles for morphology-controlled soft systems. *Soft Matter*. doi:10.1039/D5SM00061K
- 2 Sarah Schyck, Marchese, P., Amani, M., Ablonczy, M., Spoelstra, L., Jones, M., ... Masania, K. (2024). Harnessing Fungi Signaling in Living Composites. *Global Challenges*, 2400104. doi:10.1002/gch2.202400104
- 3 Sarah Schyck, Meijer, J.-M., Schelling, M. P. M., Petukhov, A. V. & Rossi, L. (2023, November). Droplet-based assembly of magnetic superballs. *Journal of Physics: Materials*, 7(1), 015003. Publisher: IOP Publishing. doi:10.1088/2515-7639/ad08d3
- 4 Sarah Schyck, Meijer, J.-M., Baldauf, L., Schall, P., Petukhov, A. V. & Rossi, L. (2022). Self-assembly of colloidal superballs under spherical confinement of a drying droplet. *JCIS Open*, 5, 100037. doi:https://doi.org/10.1016/j.jciso.2021.100037
- 5 Sarah Schyck, Evlyukhin, E., Kim, E. & Pravica, M. (2019). High pressure behavior of mercury difluoride (HgF₂). *Chemical Physics Letters*. doi:10.1016/j.cplett.2019.03.045
- 6 Evlyukhin, E., Kim, E., Goldberger, D., Ciffigu, P., Sarah Schyck, Weck, P. F. & Pravica, M. (2018). High-pressure-assisted x-ray-induced damage as a new route for chemical and structural synthesis. *Phys. Chem. Chem. Phys.* 20, 18949–18956. doi:10.1039/C8CP02119H

Selected Conferences

- 2023 ■ **APS March Meeting** Talk presented:
S. Schyck, S.C. Cure, S. Sacanna, L. Rossi. "Enhanced Swimming Behavior of Active Hematite Microparticles," (4-11 March 2023, Las Vegas, USA)
- 2022 ■ **APS March Meeting** Talk presented:
S. Schyck, J.M. Meijer, M. Schelling, A. Petoukhov, L. Rossi. "Self-assembly of Colloidal Hematite in Evaporating Droplets," (14-18 March 2022, Chicago, USA)
- 2021 ■ **CHAINS** Talk presented:
S. Schyck, J.M. Meijer, L. Baldauf, P. Schall, A. Petoukhov, L. Rossi "Crystallization of Colloidal Superballs in Evaporating Droplets," (7-8 December 2021, Virtual)