CURRICULUM VITAE

# Sarah G. Pati

## Personal and Contact Information


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## Education and Degrees

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|---|---|
| 2011 - 2015 | **Doctor of Sciences**, ETH Zurich, Switzerland<br>Advisors: Prof. Dr. Kristopher McNeill, Prof. Dr. Thomas Hofstetter |
| 2008 - 2010 | **Master of Science in Environmental Sciences**<br>ETH Zurich, Switzerland |
| 2005 - 2008 | **Bachelor of Science in Environmental Sciences**<br>ETH Zurich, Switzerland |

## Academic Positions

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| 02/2024 - present | **Tenure-track assistant professor**, University of Vienna, Austria<br>Centre for Microbiology and Environmental Systems Science |
| 11/2019 - 12/2023 | **Research associate**, University of Basel, Switzerland<br>Department of Environmental Sciences |
| 09/2016 - 05/2019 | **Postdoctoral researcher**, University of Minnesota, USA<br>Department of Civil, Environmental, and Geo- Engineering, |
| 01/2016 - 07/2016 | **Postdoctoral researcher**, Eawag, Switzerland<br>Department of Environmental Chemistry |
| 08/2011 - 12/2015 | **Doctoral candidate**, Eawag, Switzerland<br>Department of Environmental Chemistry |
| 10/2011 - 11/2011 | **Visiting researcher**, University of California Davis, USA<br>Department of Microbiology |
| 09/2009 - 12/2009 | **Research internship**, City of Zürich, Switzerland<br>Municipal Office for Drinking Water Supply |

## Awards

**Excellence in Review Award** (2018) from *Environmental Science & Technology*

**ETH medal** for outstanding doctoral thesis (2016) from ETH Zurich

**Chemistry Travel Award** (2014) from the Swiss Academy of Sciences

**Best poster presentation award** (2013) at the Isotopes 2013 Conference in Sopot, Poland

## Third-Party Funding

**SNSF Ambizione Fellowship** (2019) Principal investigator
*Isotope fractionation of $O_2$ associated with enzymatic and photochemical reactions in aquatic environments*, 4 years, Swiss National Science Foundation, CHF 892'781

**Early Postdoc.Mobility Fellowship** (2016) Principal investigator
*Impact of oxidative transformation processes on the fate of ionic liquid cations in aquatic environments*, 18 months, Swiss National Science Foundation, USD 91'650

## Peer-Reviewing Activities

*Environmental Science & Technology* (35 reviews)

*Environmental Science & Technology Letters* (7 reviews)

*Proceedings of the National Academy of Sciences* (2 review)

*Water Research* (2 reviews)

*ACS Earth and Space Chemistry* (2 reviews)

*Environmental Science: Processes & Impacts* (1 review)

French National Research Agency (1 proposal review)

## Professional Services

**Organizer and Chair** of the Session *Photochemical Transformation of Contaminants in Aquatic Environments* at the SETAC Europe $35^{th}$ Annual Meeting, May 11–15, 2025 in Vienna, Austria

**Co-organizer** of the *Aquatic Photochemistry* symposium at the $257^{th}$ ACS National Meeting & Exposition, March 31–April 4, 2019 in Orlando, FL, USA

**Co-organizer** of the *Aquatic Photochemistry* symposium at the $255^{th}$ ACS National Meeting & Exposition, March 18–22, 2018 in New Orleans, LA, USA

**Member** of *Fachausschuss Isotopen in der Wasserchemie* (German Water Chemistry Society) since 2022

**Member** of the Swiss Chemical Society (SCS, since 2021) and the American Chemical Society (ACS, 2016–2022)

## Teaching Experience

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| Summer term 2025 | **Co-lecturer** (approx. 33%), University of Vienna, 280215/6<br>*Field and Laboratory Course Environmental Pollutants* |
| Winter term 2024-25 | **Co-lecturer** (65–100%), University of Vienna, 280253<br>*Fate of Emerging Organic Pollutants* |
| Winter term 2024-25 | **Co-lecturer** (approx. 15%), University of Vienna, 280262<br>*Introduction to Environmental Chemistry* |
| Summer term 2024-25 | **Co-lecturer** (approx. 30%), University of Vienna, 280205/6<br>*Organic Pollutants in the Environment* |
| Spring term 2021-23 | **Lecturer**, University of Basel, 60366-01<br>*Einführung in die Chemie aquatischer Systeme* |
| Fall term 2020 | **Guest lecturer**, University of Basel, 20546-01<br>*Stabile Isotope in den Umwelt- und Geowissenschaften* |
| Spring term 2019 | **Co-lecturer** (approx. 33%), University of Minnesota, CEGE 8542<br>*Chemistry of Organic Pollutants in Environmental Systems* |

## Advising Experience

Luise Wilkeit, Individual research project student, since 09/2025
University of Vienna

Faiz Haque, PhD candidate, since 05/2025
University of Vienna

Elena Tiis, PhD candidate, since 01/2025
University of Vienna

Thanh Tung Nguyen, MSc student, since 02/2025–11/2025
University of Vienna

Carolina Fernandes Moreira de Carvalho, PhD candidate, 04/2020–07/2024
University of Basel, co-advised with Prof. Moritz Lehmann

Lara Brunner, BSc Geoscience student, 02/2022–08/2022
University of Basel, co-advised with Prof. Moritz Lehmann

Annika Heaps, BA Chemistry student, 09/2018–12/2018
University of Minnesota, co-advised with Prof. William Arnold

Jessica Doro, BA Chemistry student, 02/2017–05/2017
University of Minnesota, co-advised with Prof. William Arnold

Dominic von Wartburg, MSc student, 10/2012–04/2013
ETH Zurich and Eawag, co-advised with Prof. Thomas Hofstetter

## Invited Talks

**Pati, S.G.** (2024) Transformation reactions of organic contaminants and oxygen: From field sites to reaction mechanisms. Workshop, École Nationale Supérieure de Chimie de Rennes, Rennes, France, November 27.

**Pati, S.G.** (2023) What can we learn from stable isotope analysis about photochemical and biotransformation reactions of organic contaminants and $O_2$? Swiss Academy of Sciences Young Faculty Meeting Chemistry, Griesalp, Switzerland, May 31.

**Pati, S.G.** (2019) Biotransformation of organic contaminants in aquatic environments - How to close the gap between laboratory experiments and in-situ assessment? Seminar, Department of Microbiology, Eawag - Swiss Federal Institute of Aquatic Science and Technology, Switzerland, April 12.

**Pati, S.G.** (2018) From biodegradation to advanced oxidation processes - How to identify oxidative transformation pathways in aquatic environments? Seminar, Zachry Department of Civil Engineering, Texas A& M University, USA, February 21.

**Pati, S.G.** (2018) From biodegradation to advanced oxidation processes - How to identify oxidative transformation pathways in aquatic environments? Seminar, Department of Chemical and Environmental Engineering, Yale University, USA, February 14.

## Contributed Conference Talks

**Pati, S.G.**, Arnold, W.A. (2025) Fate and occurrence of quaternary ammonium compounds in aquatic environments: From photochemical transformation of ionic liquid cations to suspect screening in lake sediments. Oral presentation, Society of Environmental Toxicology and Chemistry Europe $35^{th}$ Annual Meeting. Vienna, Austria, May 11-15.

**Pati, S.G.**, Brunner, L.M., Hofstetter, T.B., Lehmann, M.F. (2025) Isotopic fractionation of $O_2$ during photochemical $O_2$ consumption: A relevant process for estimating primary production in sunlit surface waters?. Oral presentation, European Geosciences Union – General Assembly 2025. Vienna, Austria, April 27 - May 2.

**Pati, S.G.**, de Carvalho, C.F.M., Brunner, L.M., Frey, C., Ley, M., Hofstetter, T.B., Lehmann, M.F. (2024) How do molecular-level enzymatic and photochemical processes influence the use of stable $O_2$ isotopes for assessing ecosystem-level primary production?. Poster presentation, Gordon Research Conference Environmental Sciences: Water. Holderness, NH, United States, June 23-28.

de Carvalho, C.F.M., Lehmann, M.F., **Pati, S.G.** (2023) New insights into the factors controlling the magnitude of isotopic fractionation of $O_2$ consuming enzymes from triple-oxygen isotope measurements. Poster presentation, ASLO Aquatic Sciences Meeting. Mallorca, Spain, June 4-9.

de Carvalho, C.F.M., Lehmann, M.F., **Pati, S.G.** (2023) What drives the variability in isotopic fractionation of $O_2$ during enzymatic reactions? Oral presentation, European Geosciences Union – General Assembly 2023. Vienna, Austria, April 23-28.

de Carvalho, C.F.M., Lehmann, M.F., **Pati, S.G.** (2022) Uncovering the drivers for the variability in isotope fractionation of $O_2$ during enzymatic reactions. Oral presentation, $20^{th}$ Swiss geoscience meeting. Lausanne, Switzerland, November 18-20.

de Carvalho, C.F.M., Lehmann, M.F., **Pati, S.G.** (2022) Oxygen isotope fractionation during enzymatic $O_2$ consumption reactions. Poster presentation, $12^{th}$ International Symposium Geochemistry of the Earth's Surface. Zürich, Switzerland, July 24-29.

**Pati, S.G.**, de Carvalho, C.F.M., Lehmann, M.F. (2022) Is a one point calibration sufficient for accurate $\delta^{18}O$ and $\delta^{17}O$ determination of dissolved $O_2$ in water samples from Lake Lugano?. Poster presentation, $12^{th}$ International Symposium Geochemistry of the Earth's Surface. Zürich, Switzerland, July 24-29.

**Pati, S.G.**, de Carvalho, C.F.M., Ley, M., Brunner, L.M., Hofstetter, T.B., Lehmann, M.F. (2022) Stable isotope analysis of $O_2$ associated with enzymatic and photochemical reactions in aquatic environments. Poster presentation, Gordon Research Conference Environmental Sciences: Water. Holderness, NH, United States, June 19-24.

**Pati, S.G.**, Ley, M., Brunner, L.M., Hofstetter, T.B. (2022) Oxygen kinetic isotope effects associated with reactions of singlet oxygen in aqueous solutions. Oral presentation, $10^{th}$ International Symposium on Isotopomers and $12^{th}$ Isotopes Conference. Dübendorf, Switzerland, May 29 - June 3.

de Carvalho, C.F.M., Lehmann, M.F., **Pati, S.G.** (2022) Oxygen isotope fractionation during enzymatic $O_2$ consumption reactions. Poster presentation, $10^{th}$ International Symposium on Isotopomers and $12^{th}$ Isotopes Conference. Dübendorf, Switzerland, May 29 - June 3.

**Pati, S.G.**, de Carvalho, C.F.M., Lehmann, M.F. (2022) $\delta$-scale calibration for stable isotope analysis of O2 by continuous flow IRMS from $-10$ to $+95$ ‰with in-vitro photosynthesis experiments. Poster presentation, $10^{th}$ International Symposium on Isotopomers and $12^{th}$ Isotopes Conference. Dübendorf, Switzerland, May 29 - June 3.

de Carvalho, C.F.M., Lehmann, M.F., **Pati, S.G.** (2021) Accuracy of stable oxygen isotope measurements from $-10$ to 90 ‰. Poster presentation, $19^{th}$ Swiss geoscience meeting. Online, November 19-20.

**Pati, S.G.**, Arnold, W.A. (2021) Comprehensive screening of quaternary ammonium surfactants in lake sediment cores from Minnesota. Oral presentation, ContaSed 2021. Online, June 9-11.

**Pati, S.G.**, Arnold, W.A. (2019) Quantification and suspect-screening of a broad range of quaternary ammonium compounds in wastewater effluents and sediment cores from across Minnesota. Oral presentation, $257^{th}$ ACS National Meeting and Exposition. Orlando, FL, United States, March 31-April 4.

**Pati, S.G.**, Arnold, W.A. (2018) Fate and occurrence of quaternary ammonium compounds in aquatic environments: From photochemical transformation to suspect screening in sediment cores from Minnesota. Poster presentation, Gordon Research Seminar Environmental Sciences: Water. Holderness, NH, United States, June 23-24.

**Pati, S.G.**, Arnold, W.A. (2018) Transformation rates and product formation of reactions of

ionic liquid cations with photochemically produced radicals in natural and technical aquatic environments. Oral presentation, $255^{th}$ ACS National Meeting and Exposition. New Orleans, LA, United States, March 18-22.

**Pati, S.G.**, Ming, X., Arnold, W.A. (2018) Quantification and suspect-screening of hydrophobic and hydrophilic quaternary ammonium compounds in water samples by LC-HRAM-MS/MS. Oral presentation, $255^{th}$ ACS National Meeting and Exposition. New Orleans, LA, United States, March 18-22.

**Pati, S.G.**, Arnold, W.A. (2017) Photodegradation and advanced oxidation of imidazolium, pyridinium, pyrrolidinium, and piperidinium ionic liquid cations. Poster presentation, SETAC North America $38^{th}$ Annual Meeting. Minneapolis, MN, USA, November 12-16.

**Pati, S.G.**, Arnold, W.A. (2017) Fate of imidazolium, pyridinium, pyrrolidinium, and piperidinium ionic liquid cations in natural and technical aquatic systems. Oral presentation, $254^{rd}$ ACS National Meeting & Exposition. Washington, DC, United States, August 20-24.

**Pati, S.G.**, Kohler, H.-P.E., Pabis, A., Paneth, P., Parales, R.E., Hofstetter, T.B. (2017) Uncoupling of $O_2$ activation by nitroarene dioxygenases explains high variability in substrate isotope effects of (nitro)aromatic compound dioxygenation. Oral presentation, Isotopes 2017, Monte Verità, Switzerland, July 9-14.

**Pati, S.G.**, Arnold, W.A. (2017) Direct and indirect photochemical transformation of imidazolium, pyridinium, pyrrolidinium, and piperidinium ionic liquids. Poster presentation, $253^{rd}$ ACS National Meeting & Exposition. San Francisco, CA, USA, April 2-6.

**Pati, S.G.**, Kohler, H.-P.E., Pabis, A., Paneth, P., Parales, R.E., Hofstetter, T.B. (2017) Substrate specificity of kinetic isotope effects associated with the dioxygenation of (nitro)aromatic contaminants is due to uncoupling of $O_2$ activation. Oral presentation, $253^{rd}$ ACS National Meeting & Exposition. San Francisco, CA, United States, April 2-6.

**Pati, S.G.**, Kohler, H.-P.E., Pabis, A., Paneth, P., Parales, R.E., Hofstetter, T.B. (2016) $^{18}$O-Kinetic isotope effects reveal that enzymatic formation of reactive oxygen species is the rate-limiting step during dioxygenation of (nitro)aromatic contaminants. Poster presentation, Gordon Research Conference Environmental Sciences: Water. Holderness, NH, United States, June 26-July 1.

**Pati, S.G.**, Kohler, H.-P.E., Parales, R.E., Hofstetter, T.B. (2014) Kinetic isotope effects of dioxygenation reactions: A proxy for tracking biodegradation of (nitro)aromatic contaminants? Poster presentation, Gordon Research Conference Environmental Sciences: Water. Holderness, NH, USA, June 22-27.

**Pati, S.G.**, Kohler, H.-P.E., Parales, R.E., Hofstetter, T.B. (2014) Kinetic isotope effects of dioxygenation reactions: A proxy for tracking biodegradation of (nitro)aromatic contaminants? Oral presentation, Gordon Research Seminar Environmental Sciences: Water. Holderness, NH, United States, June 21-22.

**Pati, S.G.**, Kohler, H.-P.E., Hofstetter, T.B. (2013) Compound-specific isotope analysis of the oxidative degradation of nitroaromatic contaminants by nitrobenzene dioxygenase. Poster presentation, Isotopes 2013 — Isotope effects across disciplines. Sopot, Poland, June 16-21.