

Meet Prof. Robert Pollice, Thieme Chemistry Journals Awardee 2024!



Prof. Robert Pollice is an assistant professor at the University of Groningen (The Netherlands) since 2022. He obtained his M.Sc. from the Technische Universität Wien (Austria) in 2015 and his Ph.D. from ETH Zürich (Switzerland) in 2019. Prior to beginning his independent career, he carried out postdoctoral research at the University of Toronto (Canada).

Thieme: Which field of organic chemistry are you interested in the most and why?

Prof. Pollice: Artificial Organic Chemistry, that is the development and application of artificial intelligence approaches to organic chemistry. It is literally the name of my lab. I think the exploration of chemical space enabled by artificial intelligence is at least as exciting as the exploration of outer space.

Thieme: Following that, what is the focus of your current research activity?

Prof. Pollice: Molecular catalysts and chemical reactions designed by artificial intelligence with the help of simulations, realized and tested utilizing automated lab protocols.

Thieme: What do you think about the modern role and prospects of organic chemistry?

Prof. Pollice: I think one of the key challenges is realizing more sustainable processes that make an impact in the chemical industry and, ultimately, on planet Earth. This transition can be accelerated with the help of artificial intelligence and self-driving laboratories.

Thieme: Which difficulties are there for young upcoming chemists in your field? Do you have any tips?

Prof. Pollice: Young upcoming chemists are currently facing many changes and transitions in the research landscape. I think it is important to be aware of these changes and consider them in career decisions. Additionally, the pace of scientific and technological advance is accelerating, making it harder than ever to keep track of. I think it is key to be open-minded about these developments but also to accept that one cannot be on top of all of them.

Thieme: What is your most important scientific achievement to date and why?

Prof. Pollice: I think my most important achievement to date is my contribution to the understanding of the phase properties of perfluoroalkanes and the physical origin of their immiscibility with alkanes. During my doctoral studies, we were able to show that it is not the commonly assumed low polarizability of fluorine, but rather the shape of perfluoroalkanes preventing favorable packing, that is the cause of their weak intermolecular interactions. This is important as there is a big concern about the health and environmental impact of perfluoroalkanes like perfluorooctanoic acid, which have been shown to be toxic and bioaccumulative. There is currently a large shift in the chemical industry going away from the most concerning of these compounds, but finding suitable substitutes is still a complicated process. Our findings can contribute to designing more environmentally benign materials with similar properties.

Thieme: Could you tell us something about yourself outside the lab, such as your hobbies or extra-work interests?

Prof. Pollice: I am passionate about music, sports, and video games, both in a passive and an active capacity.
