Meet Dr. Robert Hein, Thieme Chemistry Journals Awardee 2026!


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Dr. Robert Hein *obtained his PhD at the University of Oxford in 2020 and remained there as a postdoc, and from 2021 Fulford Junior Research Fellow at Somerville College. In 2022, Robert moved to the University of Groningen as a Marie Curie Postdoctoral Fellow. In the summer of 2024, Robert started his independent career at the Organic Chemistry Institute, University of Münster and was promoted to junior professor in early 2025. His group is, among others, financially supported by a Liebig Fellowship (FCI), a return fellowship of the state of North Rhine-Westphalia and the Hector Fellow Academy.*

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

Dr. Hein: My scientific interests mainly focus on synthetic supramolecular chemistry, molecular nanotechnology and organic electrochemistry. Of particular interest is the synthesis of novel (supra)molecular architectures that respond to external stimuli. While I am currently not focusing on synthetic methodology, synthetic chemistry is still a major focus of my work; after all, we can only study what we can make. The wide structural scope and flexibility of organic chemistry is particularly appealing to me as we can easily tailor various molecular properties. This is especially important in the context of supramolecular structures and molecular switches, as even subtle modifications often have huge consequences for their structure and behavior.

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

Dr. Hein: Research in my group currently focuses on the investigation of redox-switchable systems across all length scales. To this end we develop novel redox-active organic molecules whose molecular properties, including their color, fluorescence, charge and geometry, can be reversibly switched by chemical or electrochemical redox stimuli. Subsequently, we study their switching properties in detail using different advanced electrochemical and spectroscopic tools and then apply these systems in various proof-of-principle applications, ranging from molecular machines to receptors and sensors.
A particular focus is the integration of such redox switches into larger assemblies and materials, including surfaces, polymers, nanoparticles and other structured matter. One the one hand, this enables the translation of their switching function from the nano to the macroscale. Consequently, these systems may be of interest as smart surfaces or materials, in molecular electronics, for information or energy storage or as actuators. On the other hand, we aim to rationally tune the redox (switching) properties of our responsive building blocks by judiciously adjusting their local environment, for example with respect to the local

polarity, dielectric or crowding. This is expected to enable the design of improved systems with thus far unexplored and emergent redox and switching properties.

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

Dr. Hein: The ability to create entirely novel, functional and highly diverse molecular scaffolds with tailorable properties is one of the core strengths of organic chemistry, and will remain a crucial aspect of numerous future technologies. In addition to fundamental roles in established fields, such as drug development and material synthesis, this will most likely further diversify towards intersections with other disciplines, such as organic electronics, energy storage and many more. Our current drive towards higher sustainability, a circular economy and carbon neutrality comes with significant challenges, but I believe that organic chemistry can, and will, provide critical solutions to diverse problems by enabling access to tailor-made molecules and materials.

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

Dr. Hein: A common, well-known challenge across academia for many people is often job security and the high degree of flexibility that is required, which many people have already written about and commented on.
I think a less obvious and often overlooked challenge for young academics is the shift in responsibilities. As a PhD student and postdoc the main focus, and skills, are centered around research and publishing. However, upon progression to a faculty position the job requirements very quickly shift away from conducting research to mentoring, teaching and financial and group management, for which we are often not formally trained. For me personally this transition has been relatively smooth thus far, because I have had great support in my institute and through a wider informal network of mentors. My recommendation is to openly discuss challenges, to ask for support when necessary, and to foster a broad network of peers and mentors across all career stages.

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

Dr. Hein: On a personal level, I am most grateful for, and proud of, the many collaborations I have managed to establish and the people I mentored. Throughout all of my career stages I have been very lucky to work with kind and talented students, colleagues and mentors.
In terms of specific research achievements my best work has generally resulted from a detailed understanding, and use of, electrochemical methods at the interface with supramolecular chemistry. Especially the development of novel redox-switching approaches in the context of host–guest chemistry,[1] sensing[2] and multi-responsive switches and materials[3] stand out. That being said, my favorite paper, a recent publication on chiral induction and memory effects,[4] actually does not primarily focus on redox chemistry. This work is special to me, not only because I love the concept, but also because working on this project with two close friends and colleagues was incredibly fun and highly intellectually rewarding.

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

Dr. Hein: Outside of the lab I like playing chess, travelling and cooking. I am quite a foodie, so I always like to try different things and cuisines.

References

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(3) R. R. Weber, R. Hein, A. Ryabchun, Y. Gisbert, D. Garcia Romero, M. A. Loi, B. L. Feringa. *Nat. Commun.* **2025**, *16*, 9106.

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