

Meet Dr. Zackaria Nairoukh, Thieme Chemistry Journals Awardee 2024!



Dr. Zackaria Nairoukh has been a Senior Lecturer, Institute of Chemistry, Hebrew University of Jerusalem (Israel), since 2020. He obtained his M.Sc. and Ph.D. degrees (2009–2014) as part of the direct track Ph.D. program at the Hebrew University of Jerusalem. From 2014 through 2019, he undertook postdoctoral research, first at Technion – Israel Institute of Technology, and then at Westfälische Wilhelms-Universität Münster (Germany).

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

Dr. Nairoukh: My group's primary interest lies in synthetic organic chemistry, particularly in developing efficient methods for constructing complex architectures in a straightforward manner. Currently, our focus is on aliphatic heterocycles due to their significant role in pharmaceutical applications. The synthesis of these molecules is inherently complex, often requiring tedious multistep processes. Challenges escalate when functional handles are involved, leading to drastic failures with typical methods. This is where my group comes in.

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

Dr. Nairoukh: Since our lab was established in 2020, we have pursued two primary missions. First, we aim to develop dearomative functionalization reactions that allow the introduction of multiple functional handles with a high level of precision. This involves utilizing pyridine precursors, breaking down their aromaticity, and subjecting the resulting intermediates to various catalytic transformations. While the concept may sound straightforward, the challenges associated with implementing this strategy are substantial.

Second, we seek to explore the influence of the carbon–fluorine (C–F) bond on the conformational behavior of fluorinated aliphatic heterocycles. The C–F bond can significantly impact the molecular shape of complex structures and could be harnessed to develop unique transformations, thus providing access to sophisticated structures.

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

Dr. Nairoukh: Organic chemistry will continue to play a central role in our modern society. Its beauty lies in its capacity to challenge our minds and push the boundaries, allowing us to explore new reactivities. We do so to address critical questions and challenges, particularly in pharmaceutical applications. Whether for the present or the future, organic chemistry will remain indispensable in all aspects of life.

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

Dr. Nairoukh: In my opinion, synthetic organic chemistry is becoming increasingly complex over time. The traditional approaches to designing and building molecules have evolved due to fascinating innovations in synthetic methods. Alongside the persistent demand for accessing sophisticated structures with specific functionalities, the necessity to develop complex synthetic strategies will persist.

My advice to young chemists is the same as to my group members: Stay updated! Regularly reading scientific literature, attending conferences, and participating in seminars and workshops will not only save you valuable time but also broaden your horizons for new directions.

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

Dr. Nairoukh: While it may be too early to answer this question, I am extremely proud of what my group has accomplished so far. In particular, our first research article discussing the construction of highly substituted piperidines via dearomative functionalization reaction (*Angew. Chem. Int. Ed.* **2023**, e202315108). Building on the same concept, we anticipate the publication of more papers in the near future.

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

Dr. Nairoukh: Academic life is undeniably time-consuming, filled with constant tasks such as writing reports, grants, papers, reviews, attending committees, etc. Despite these commitments, I prioritize maintaining a balance between my professional responsibilities and spending quality time with my family. Outside of work, I enjoy engaging in activities such as walking, hiking, cooking and, very rarely, video gaming.
