

Meet Prof. Gen Luo, Thieme Chemistry Journals Awardee 2025!



Prof. Gen Luo received his PhD in 2015 from Dalian University of Technology (China). During his doctoral studies, he was a joint-training PhD candidate at RIKEN (Japan) from February 2014 to February 2015. In August 2016, he rejoined the group at RIKEN as a postdoctoral fellow. At the end of 2017, he returned to Dalian University of Technology as an associate professor and, in November 2019, was appointed as a full professor at Anhui University (China).

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

Prof. Luo: I am particularly interested in organo-metallic chemistry, particularly the mechanistic aspects of metal-catalyzed reactions. By applying computational chemistry, I aim to explore how transition metals facilitate the activation and transformation of chemical bonds at the molecular level, which is key to gaining a deep understanding of reaction processes. This mechanistic insight not only enhances our ability to rationally design reactions, but also allows for their precise control, a pursuit that greatly fascinates me and fuels my passion for research.

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

Prof. Luo: My current research focuses on the computational study of rare-earth-metal-catalyzed/mediated organic reactions, aiming to reveal how the unique properties of rare-earth metals regulate the reactivity of their complexes.

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

Prof. Luo: Organic chemistry continues to play a central role in scientific and technological advancements, spanning areas such as drug development, materials science, sustainable catalysis, and energy conversion. With the ongoing integration of computational methods and machine learning, we are now able to explore chemical space more efficiently, predict reaction outcomes, and accelerate the development of novel transformation methods. The future of organic chemistry will increasingly rely on interdisciplinary research, combining computational chemistry, machine learning, and experimental techniques to drive the progress of the field.

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

Prof. Luo: For young researchers in computational chemistry, one of the main challenges is acquiring a deep understanding of theoretical concepts while staying current with advancements in computational methods. Moreover, with the rise of machine learning in this field, the interdisciplinary nature requires researchers to have strong communication and learning abilities. My advice is to build a solid foundation in computational chemistry while staying attuned to the latest developments in the field. At the same time, actively participate in collaborative projects and maintain curiosity and a thirst for knowledge about diverse chemical problems and emerging technologies, as these will contribute significantly to growth and breakthroughs.

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

Prof. Luo: My most significant scientific achievement lies in elucidating the unique mechanistic principles of rare-earth organometallic chemistry through theoretical calculations, including new mechanistic models, novel regulation strategies, and catalyst design principles. These systematic theoretical insights have not only deepened our fundamental understanding of rare-earth chemistry, but have also provided a robust theoretical foundation for the rational development and precise design of more efficient catalytic systems.

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

Prof. Luo: Outside of my research, I enjoy watching movies and traveling, exploring and experiencing the landscapes and culinary cultures of different regions.
