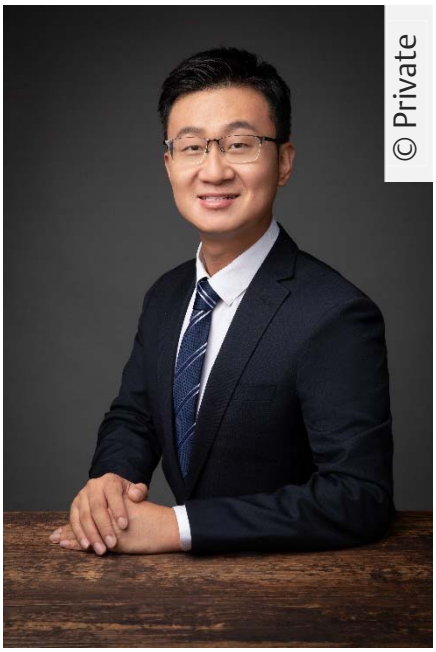
Meet Prof. Tao Shen, Thieme Chemistry Journals Awardee 2024!



Prof. Tao Shen *is an Associate Professor at Shanghai Jiao Tong University (P.R. China). He completed his undergraduate studies in 2012 at the Science Base Class of China Agricultural University (P.R. China), and his Ph.D. in 2017. He carried out postdoctoral research from 2018 to 2022 at Cornell University (USA) prior to beginning his independent career.*

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

Prof. Shen: My primary research interest lies in the selective activation and assembly of chemical bonds. On one hand, such reactions often yield unexpected products, leading to the discovery of intriguing reaction mechanisms and processes. This represents the epitome of creativity in synthetic chemistry and underscores its inherent allure. On the other hand, skeletal editing achieved through the assembly of chemical bonds often facilitates the synthesis of compounds that are challenging to access using conventional methods. This significantly streamlines synthetic procedures and exhibits strong practical utility.

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

Prof. Shen: My group's research activity is mostly based on green synthesis and catalysis, especially the development of novel, amazing, and unprecedented chemical reactions that involve selective activation and assembly of inert bonds.

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

Prof. Shen: Organic synthetic chemistry creates value through the synthesis of molecules that can impact and alter the world. It is an exceptionally creative discipline and one that has the potential to realize great dreams. It holds significant value for humanity and society alike. The development of artificial intelligence and big data is highly beneficial for the future development of organic chemistry and the work of organic chemists. It may have even more significant implications for industries and manufacturing sectors. As a dynamic and evolving field, synthetic chemistry continues to propel scientific progress, offering exciting prospects for groundbreaking discoveries in the coming years.

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

Prof. Shen: To a certain extent, synthetic methodology encounters developmental bottlenecks, making innovation challenging and impeding the ability of young scholars to produce creative outcomes. In order to address these perplexities, I believe that on one hand, it is essential to "dig deep" by cultivating a thorough understanding of one's research domain, continuously delving into and exploring the essence of phenomena with a spirit of thoroughness. On the other hand, it is important to foster "cross-disciplinary" aptitude, breaking down the boundaries between disciplines, and discovering new possibilities and avenues for breakthroughs through the intersection and fusion of different fields.

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

Prof. Shen: During my mentored research under Professor Tristan H. Lambert at Cornell University, I contributed to the oxygenation of multiple adjacent C–H bonds. I believe this work paves the way for the multifunctionalization of continuous inert C–H bonds and establishes a significant precedent in this area. It represents a novel and efficient transformation distinct from the more established single C–H bond functionalization methods. This advancement holds promise for making significant strides in rapidly increasing molecular complexity, facilitating late-stage modifications of drug molecules, and enabling concise synthesis.

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

Prof. Shen: My hobbies include nurturing fish and flowers, immersing myself in the beauty of mountains and rivers, and embracing nature's wonders. I am particularly fascinated by unseen creatures, akin to uncovering magical chemical reactions.