

Meet Dr. József Kupai, Thieme Chemistry Journals Awardee 2025!



Dr. József Kupai is a habilitated associate professor in chemical engineering at Budapest University of Technology and Economics (Hungary) and the Head of the Organocatalysis Research Group.

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

Dr. Kupai: My main interest lies in organocatalysis and electrocatalysis, particularly in developing efficient catalytic systems that enable sustainable and selective transformations. Organocatalysis is a fascinating field because it allows for the design of environmentally friendly catalytic processes without the need for transition metals. Moreover, the ability to fine-tune organocatalysts provides a powerful tool for asymmetric synthesis, which is highly relevant in pharmaceuticals and materials sciences.

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

Dr. Kupai: Currently, my research is centered on developing novel organocatalytic and electrocatalytic systems and exploring their potential in green chemistry applications. Additionally, I am investigating efficient polymer-decomposition strategies using recyclable catalysts, as well as the development of alternative solvents to minimize environmental impact. These projects align with the principles of sustainability and circular chemistry, which are increasingly vital in modern organic synthesis.

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

Dr. Kupai: Organic chemistry remains a cornerstone of scientific innovation, with applications ranging from pharmaceuticals to energy storage and sustainable materials. The field is evolving rapidly, with new methodologies such as photoredox catalysis, machine-learning-assisted synthesis, and biorthogonal chemistry shaping its future. A key challenge today is the shift toward greener and more sustainable processes, and I believe that organic chemists will play a crucial role in addressing environmental and energy-related challenges through innovative catalyst design and resource-efficient transformations.

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

Dr. Kupai: Young chemists face several challenges, including high competition for funding and academic positions, and the need to master interdisciplinary knowledge (e.g., computational chemistry, materials science). My advice to young researchers is to develop a strong foundation in mechanistic understanding, stay open to new techniques, and build international collaborations. Networking and attending conferences are also key to gaining visibility and staying informed about cutting-edge advancements.

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

Dr. Kupai: One of my most significant achievements is the successful development of efficient organocatalytic systems, which have been recognized through high-impact publications and independent citations. Another key accomplishment is my work on polymer decomposition strategies using recyclable catalysts, which has important implications for addressing plastic waste challenges. Additionally, being the principal investigator of high-rated OTKA research grants is a great milestone, reflecting the recognition and support of my research directions.

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

Dr. Kupai: Outside the lab, sports and family are important parts of my life. I am passionate about running, and triathlon is my favorite sport, so I also swim regularly and go cycling when I have the opportunity. Staying active is essential for me, and I make time for the gym once a week as well. Beyond sports, my biggest joy is spending time with my one-year-old daughter—we go to the playground together every day, which is a wonderful way to unwind and enjoy quality time. In the evenings, I love reading about training, running, and triathlon to improve my performance and stay motivated. Balancing my professional and personal life through sports and family time keeps me energized and focused.