Meet Dr. Arunabha Thakur, Thieme Chemistry Journals Awardee 2026!


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Dr. Arunabha Thakur *earned his PhD from the Indian Institute of Technology Madras (India). After two subsequent postdoctoral stints – at TU Dresden (Germany) and IISER Kolkata (India) – he began his independent research career in 2015 at National Institute of Technology Rourkela (India) as a DST Inspire Faculty. Subsequently he joined Jadavpur University in 2017 as an assistant professor. He is the recipient of SERB-International Research Experience fellowship to carry out research work with Prof. Francois P Gabbei at Texas A&M University (USA) (2022–2023) where he is currently serving as a visiting professor (2025–2026).*

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

Dr. Thakur: Our group is mostly interested in two different fields of organic chemistry. One of them is to develop homogeneous molecular catalysis based on inexpensive transition metals for various useful organic transformations. We are also interested in designing photoswitchable organic materials. In this branch of organic chemistry, we focus on designing new stimuli-responsive molecules to understand structure–property relationships and use this understanding to rationally design materials with specific properties that can solve real-world problems.

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

Dr. Thakur: Our research interest is bidirectional but mainly centered on the synthesis of organic molecules and their potential applications in various fields. Our principal aim is to develop strategies for synthetically important transformations like C–C and C–X (X = O, S, N, etc.) bond formations by C–H activation using earth-abundant and cheap transition metals (Cu and Co, for example) as catalysts. Our research group is also intensively involved in developing dithienylethene (DTE) based organic photoswitchable materials and their potential applications in anti-counterfeiting technology and in controlled singlet oxygen generation for catalytic selective photooxidation of various organic molecules. We are also actively involved in designing visible and NIR light triggered photoswitchable water-soluble organic molecules for application in photodynamic therapy.

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

Dr. Thakur: Organic chemistry is one of the most central and dynamic areas within chemistry, but its role has progressed a lot from the traditional perception of just synthesizing molecules in a laboratory. Today, it is profoundly interrelated with other fields like medicine and pharmaceuticals, materials science, energy and sustainability, biochemistry and chemical biology, etc.

Understanding organic chemistry is the basis of drug design and synthesis. In fact, every medication – from antibiotics to cancer therapies – is dependent on organic chemistry knowledge. Developing new advanced materials like polymers, biodegradable plastics, organic light-emitting diodes, and organic semiconductors requires knowledge in organic chemistry. Nowadays, there is an increasing demand to design environmentally friendly organic reactions, reduce waste, and use renewable resources and greener chemical processes. The boundary between organic chemistry and biology has blurred further, especially in studying proteins, DNA interactions, and metabolic pathways. In future, breakthroughs will likely happen at the intersections of organic chemistry and various disciplines, such as AI, nanotechnology, or biotechnology. The future of organic chemistry is highly promising, with expanding applications in healthcare, energy, environment, and advanced technology. It will continue to remain a key factor of scientific and industrial progress.

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

Dr. Thakur: There are countless opportunities in organic chemistry, but it's not the same scenery as it was decades ago. Young chemists face some real challenges early in their careers. One primary difficulty is the high competition for positions especially in academics and pharmaceutical industries. Secondly, it's a long training path. To become highly skilled in organic chemistry often demands many years of graduate school and several more years of postdoctoral work. That's a big time investment before job stability. In academia, research-grant funding is competitive, and there is strong pressure to publish frequently in reputed journals. Nowadays, routine synthesis and analysis are becoming more mechanical. That does not eradicate jobs, but it demands more skilled chemist as a whole. Contemporary problems often require knowledge beyond chemistry – like biology, data science, or materials science – which can feel overburdening. In my opinion, along with practical chemistry skills, learning basic programming and data analysis make a chemist much more versatile, especially these days as interdisciplinary studies are on the rise. It is indispensable to acquaint oneself with computational chemistry and spectroscopy and various analytical techniques.

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

Dr. Thakur: I think it is almost impossible to select one, so I will select a few that stand out on a personal level. The first would be securing an independent position at Jadavpur University. There is nothing more exciting than the first day running your own research group. This was an incredible time for me and I'm extremely grateful to all of my mentors and teachers. The second would be my first paper as co-corresponding author with my first PhD student. Furthermore, I was delighted with our recent achievements in developing new synthetic photoswitchable organic materials for controlled singlet oxygen generation and their applications in various fields. These recent results were published in: *Small* **2025**, e06660; *Adv. Opt. Mater.* **2025**, *13*, 2500620; and *Chem. Eur. J.* **2024**, *30*, e202401562. I am also delighted to have designed the visible-light-triggered cobalt- and copper-based photocatalytic synthesis of α,β-epoxy ketones (*Org. Lett.* **2024**, *26*, 8183–8187) and isocoumarin and isoquinolinone scaffolds at room temperature (*Chem. Commun.* **2025**, *61*, 8851–8854).

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

Dr. Thakur: Outside the lab, I really enjoy travelling and exploring new places. I find it exciting to experience different cultures and environments and it helps me stay curious and open-minded. Travelling also pushes me to adapt to new situations, which I think is a valuable skill both personally and professionally. In my free time, I also like watching movies and listening to music. Overall, these interests help me come back to my work more focused and motivated.