

Meet Dr. Indu Bala, Thieme Chemistry Journals Awardee 2026!



Dr. Indu Bala is an assistant professor at Indian Institute of Technology Mandi (IIT Mandi), India since October 2023. She obtained her PhD from IISER Mohali (India) in 2021, then pursued postdoctoral research at Dartmouth College (USA) before taking up her current position.

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

Dr. Bala: I am particularly interested in supra-molecular organic chemistry with particular interest in liquid crystals and stimuli-responsive functional organic materials. What fascinates me most is how small structural changes in organic molecules can lead to large macroscopic responses, such as changes in color, optical properties, or energy storage behavior. Designing molecules that can respond to light and convert it into useful functions – for example controlling liquid crystal organization or storing light energy in the organic molecules – is an area where organic chemistry directly connects molecular design with real-world applications.

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

Dr. Bala: My research focuses on the design of photoresponsive organic molecules and their integration into functional materials. In particular, my group works on designing light-responsive molecular systems and chiral materials for various device applications.

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

Dr. Bala: Organic chemistry today plays a central role in addressing global challenges, including sustainable energy, advanced materials, and biotechnology. Modern organic chemistry is no longer limited to synthesis, it now interfaces strongly with materials science, physics, and device engineering. With the development of smart molecular systems, responsive materials, and molecular machines, organic chemistry is becoming a key discipline for designing the next generation of adaptive and energy-efficient technologies.

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

Dr. Bala: One of the major challenges for young chemists is the increasingly interdisciplinary nature of research. While this creates exciting opportunities, it also requires learning techniques and concepts beyond traditional organic synthesis.

My advice to young researchers would be:

- Develop a strong foundation in chemistry fundamentals.
- Be open to interdisciplinary collaborations.
- Focus on asking meaningful scientific questions rather than only following trends.
- Most importantly, persistence and curiosity are essential, as research often progresses through failures before success.

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

Dr. Bala: One of my most significant achievements is our work on photomodulation of the helical pitch of cholesteric liquid crystals using photo-switchable chiral dopants, which was accepted for publication in *Nature Chemistry*. In this work, we demonstrated how light-responsive chiral molecular dopants can dynamically control the helical structure of cholesteric liquid crystals, enabling tunable structural colors. This research highlights how molecular design can be translated into dynamic optical materials, which could have applications in smart displays and adaptive photonic materials.

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

Dr. Bala: Outside the lab, I enjoy simple activities that help me recharge and maintain balance. I like spending time in nature, especially in the beautiful surroundings of the Himalayas where IIT Mandi is located. I also enjoy reading, mentoring students, and engaging in academic discussions beyond my own research field.