

## Editorial Board Focus: Prof. Tharmalingam Punniyamurthy (Indian Institute of Technology Guwahati, India)

**Background and Purpose.** From time to time, SYNFORM portraits Thieme Chemistry Editorial Board or Editorial Advisory Board members who answer several questions regarding their research interests and revealing their impressions and views on the developments in organic chemistry as a general research field. This Editorial Board Focus presents Prof. Tharmalingam Punniyamurthy (Indian Institute of Technology Guwahati, India) who joined the Associate Board of *SynOpen* with effect of January 2023.

### Biographical Sketch



Prof. T. Punniyamurthy

**Tharmalingam Punniyamurthy** completed graduate studies at the Bharathidasan University, Tiruchirappalli (India) and Ph.D. at the Indian Institute of Technology Kanpur (India) under the supervision of Prof. Javed Iqbal. Subsequently, he pursued postdoctoral research at the North Dakota State University, USA (Prof. M P Sibi), Kyushu University, Japan (Prof. T Katsuki), Montpellier University, France (Prof. A Vioux) and National School of Chemistry Montpellier, France (Prof. J E Moreau). In July 2001, he joined the Indian Institute of Technology Guwahati (India) and his research group focuses on the development of synthetic methods for sustainable organic synthesis. He served as Head, Department of Chemistry, Dean of Faculty Affairs and Chief Vigilance Officer at the Indian Institute of Technology Guwahati. He is recipient of CNRS, Fulbright, JSPS and UKIERI Research Fellowships and served as the Visiting Professor at The Scripps Research Institute, San Diego (USA), Kyushu University (Japan) and Oxford University (UK). He is a Fellow of the Indian Academy of Sciences, The National Academy of Sciences, India, the Indian National Science Academy and the Royal Society of Chemistry. He is the co-editor of the two-volume book *Transition-Metal-Catalysed C-H Functionalization of Heterocycles*, published by Wiley.

### INTERVIEW

**SYNFORM** *You are a leading researcher in the field of organic synthesis. Could you tell us more about the importance of that field and your current research activities?*

**Prof. T. Punniyamurthy** Transition-metal-catalyzed C–H bond activation/functionalization has established itself as a breakthrough research area in catalysis as well as in organic synthesis. Over the years, it has been offering a concise pathway for the direct transformation of C–H bonds into C–C/C–heteroatom bonds, thereby streamlining the route of synthetic procedures and hence amplifying reaction yields by minimizing the formation of by-products. Moreover, the C–H activation strategy obviates the necessity of pre-functionalized starting materials and assures step- and atom-economy. Consequently, our research focuses on showcasing miscellaneous methods and their subsequent incorporation in fabricating heteroatom-embedded cyclic structural motifs. Lower catalyst loading and the use of readily available synthetic precursors for achieving site-selective functionalization has been our primary aim. For example, activation/functionalization of the intrinsically inert C4–H bond in indole-based moieties can lead to the formation of the structural scaffold of drug molecules as well as bio-active compounds, highlighting the importance of our recently developed methodologies. Currently, our efforts rely on C–H functionalization using strained ring systems as viable coupling partners to introduce molecular complexity to a simple substrate. In addition, functionalization of more inert  $sp^3$  C–H bonds under milder reaction conditions using abundant 3d-transition metals is what we look forward to exploring in the near future. Further, employing a metalla-photoredox method as an alternative sustainable and greener aspect of accomplishing C–H bond functionalization would be an interesting topic to anticipate and expand our area of research.

**SYNFORM** *Please comment on your role as an Associate Editor of SynOpen.*

**Prof. T. Punniyamurthy** I am looking forward to taking on the responsibility of upholding the scope and aim of the journal, selecting the most original and important contributions.

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

**Prof. T. Punniyamurthy** Outside of work, I enjoy listening to music, playing badminton and reading.

