**Molecular Diversity through Cascade C-H Activation**

**Ranjan Jana**, Sr Scientist

Organic & Medicinal Chemistry Division, CSIR-Indian Institute of Chemical Biology, Kolkata-700 032.

E-mail: rjana@iicb.res.in

**Abstract**

The beginning of the twenty-first century has witnessed significant advances in the field of C–H bond activation, and this strategy is now an established piece in the synthetic chemist’s toolbox.1 This technology is particularly useful for rapid construction and late-stage diversification of the functional molecules. The efficient, simultaneous synthesis of structurally diverse compounds, better known as diversity-oriented synthesis (DOS) through C-H activation is not explored and remains a challenge to synthetic chemists. However, this DOS approach has enormous implications for the discovery of small molecules with desired properties, such as catalysts, synthetic reagents, biological probes and new drugs.2 In this vein, we are working on the synthesis of structurally diverse medicinal scaffolds via cascade C-H activations. This integrated approach not only avoids the need of prefunctionalization steps but also cut down the purification steps. In this talk, the divergent synthesis of Fujiwara-Moritani Heck, indole and indolines from anilines via C-H activation will be we discussed (Scheme 1).3



**Scheme 1.** Diversity oriented synthesis through C-H activation

References:

1. Chen et al., *Angew. Chem. Int. Ed*. **2009**, *48*, 5094-5115.
2. Spring et al., *Org. Biomol. Chem*. **2000**, *1*, 3867-3870.
3. Manna et al., *Org. Lett*. **2015**, *17*, 672-675.

**Presenter Details:**

|  |  |
| --- | --- |
| **Dr. Ranjan Jana,**Organic and Medicinal Chemistry DivisionCSIR-Indian Institute of Chemical Biology, Kolkata-700032, India Email: rjana@iicb.res.inWeb:http://iicb.res.in/divisionwiselistofscientists/chemistry/ranjanjana.html |  **C:\Users\CSIR-IICB\Desktop\R Jana photo edited.jpg** |

Ranjan Jana obtained his M.Sc. in Chemistry from Vidyasagar University in 2002 and his Ph.D. degree in Organic Chemistry from Indian Association for the Cultivation of Science (IACS) in 2007. He did his postdoctoral studies with Prof. S. Breverman at Bar-Ilan University, Israel (2007-2008); Prof. J. A. Tunge at Kansas University, USA (2008-2010) and Prof. M. S. Sigman at University of Utah, USA (2010-2012). He joined as senior scientist at Organic and Medicinal Chemistry Division, CSIR-IICB in 2013. He is working on divergent synthesis of medicinal scaffolds via cascade C-H activation. He has received prestigious Ramanujan fellowship from SERB, Govt. of India in 2013.