Novel Platform on Organocatalysis - Since & Then

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Overview

Continuously increasing interest towards the concept of "GO GREEN" has motivated chemist to develop alternative reagents to metals. Therefore, to achieve this challenge a number of approaches have been addressed. These methods rely on the atom economical approaches such as direct C-C and C-X bond formation using organocatalysis and non-metal catalyzed / mediated synthetic transformations. The methods avoid the risk for the formation of hazardous side-products in compare to the traditional metal catalyzed/mediated synthetic protocols. The continuous developments in this research field have stimulated steps up opportunities in newer dimensions of organocatalysis that can be turned as the sustainable workplace of superior tomorrow. The field of organocatalysis has gained considerable attention towards the synthesis of drug molecules for life threatening diseases. Hence, the topic of organocatalysis in terms of theory and experimental should be learned in greater details. In this regards, this course will focus on the application of organocatalyst on a number of methods such as domino reactions, multicomponent reactions and direct functionalization of C-C, and C-X bond formation. Additionally, this course will also focus on the application of organocatalysis on recent hot topics of research such as C-H activation, Cooperative dual catalysis and frustrated Lewis pairs.

The present course has been structured to present a detailed overview of the organocatalysis. The complete course consist several lectures, tutorials and assignments. The participant will gain valuable concept in a broad range of topics on the synthetic transformations using organocatalysis.

The course intends to fulfill following key-objective:

- To create exposer for the participants with the fundamentals of organocatalysis
- To understand the multi-disciplinary approaches of organocatalysis
- Exposing participants to the novel areas of organocatalysis and application in broad spectrum of research fields
- To provoke the capability and interest of the participants from north-eastern region of India to align them with recent trends of research.

Course Information	**Duration:** October 29 – November 2, 2018 **Place:** Department of Chemistry, NIT Manipur **Total contact hours:** 18 hours (10 hours lecture, 6 hours tutorial & 2 hours assignments) **Number of participants for the course will be limited to eighty.**
You Should Attend If…	▪ You are a chemical engineer or research scientist interested in exploring green aspects of organic synthesis. ▪ You are working in pharmaceutical company interested to learn application of recent advances in green synthesis using organocatalysis. ▪ You are a student, postdoctoral fellow, research scholars or faculty from industry & academic institutions, and interested to learn about modern synthetic tools in organic chemistry.
Fees	The participation fees for taking the course is as follows: **Participants from abroad : US $200** **Industry/ Research Organizations: 5000/-** **Academic Institutions:** UG Students: Rs. 1500/- PG Students: Rs. 2000/-

	Ph.D Students: Rs. 2500/- Postdoctoral fellow/Research Associate: Rs. 3000/- Faculty Members: Rs. 3500/- The above fee include all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, 24 hr free internet facility. If available, the participants will be provided with accommodation in hostel on payment basis.

The Faculty

Foreign Faculty: Prof. (Dr.) René Wilhelm (Department of Chemistry, University of Paderborn, Germany).

He was born in November 1972 in Hanover, Germany. After his A-levels and his military service, he started in 1993 his chemistry studies at the University of Hanover. He completed in 1998 his studies with his diploma work in the group of Prof. Butenschön. He then moved to London and got in 2001 his Doctor of Philosophy at the Imperial College of Science, Technology & Medicine in London, in the group of Dr. Widdowson. Thereafter, he was for one year Postdoc with Prof. Vollhardt in Berkeley, California. After an additional half year as Postdoc with Prof. Magnus in Austin, Texas, he started in 2003 his independent academic career as a junior-professor at the Clausthal University of Technology in Germany. After a positive mid-term evaluation of his junior-professorship in 2006, he did in 2009 additionally a habilitation at the Technical University of Clausthal. He was associate professor at the Nicolaus Copernicus University of Toruń in the summer semester 2010. He is a member of the Royal Society of Chemistry, the American Chemical Society and the German Chemical Society (GDCh). Between 2001 und 2002 he was a Feodor-Lynen Fellow of the Alexander von Humboldt Foundation. He was awarded in 2010 a Heisenberg Fellowship of the German Research Foundation and received in 2016 and awarded a Thieme Chemistry Journals Award. His research interest relies on mainly organocatalysis and ionic liquids. He has number of publications in international journals.

Please follow the link of his research webpage @ https://chemie.uni-paderborn.de/arbeitskreise/organische-chemie/wilhelm/

Course Coordinator: Dr. Chandi Charan Malakar, (Department of Chemistry, National Institute of Technology (NIT) Manipur).

Dr. Chandi C. Malakar currently working as Assistant Professor at the department of chemistry, National Institute of Technology (NIT) Manipur. After completing M.Sc from IIT Kanpur, he moved to Ludwig-Maximilians University Munich (LMU Munich), Germany as research fellow. Dr. Malakar awarded his doctorate degree (Ph.D) in 2011 from University of Hohenheim, Stuttgart, Germany under the supervision of Prof. (Dr.) Uwe Beifuss. Followed by three successive Postdoctoral Research work (during 2011-2014) at University of Antwerp, Belgium and

Course Co-ordinator

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For the updates on the entitled course, please follow the NIT Manipur website:

http://www.nitmanipur.ac.in

University of Heidelberg, Germany, Dr. Malakar joined (in 2014) a Canadian Pharmaceutical Company called SignalChem LifeSciences (P) Ltd. as Senior Principal Scientist. Afterwards, in 2015 he worked as research associate at Indian Institute of Science (IISc) Bangalore and as Assistant Professor (on contract) at NIT Jalandhar. He has awarded several fellowships such as MCM scholarship for M.Sc study in IIT Kanpur, Pegasus Marie Curie postdoctoral fellowship in Belgium, PBC postdoctoral fellowship in Israel and BOF - IWO postdoctoral fellowship from University of Antwerp, Belgium. Apart from a number of abstract high-lights in scientific magazine, chemical catalogues and conference papers, he has published more than 40 research articles in international peer-reviewed journals. He has been recognized as the recipient of Early Career Research Grant sponsored by Science & Engineering Research Board (SERB) and two courses under Global Initiative of Academic Network (GIAN) sponsored by MHRD, Govt. India. His current research target rely on developing novel methodologies in the area of transition-metal catalysis, C-H activation, organocatalysis, frustrated Lewis Pairs, cooperative dual catalysis, *asymmetric catalysis*, chemistry of heterocycles and green chemistry.

Please follow the link of his research webpage @ https://chdeepm.wixsite.com/mysite

More information:

Further information on the registration form and other details will be given in the NIT Manipur website @ http//: http://www.nitmanipur.ac.in/

For any queries please contact the course coordinator Dr. Chandi Charan Malakar, Mobile: 9862532117, E-Mail: cmalakar@nitmanipur.ac.in, chdeepm@gmail.com