

## Workshop on "Bio-Catalysis for accelerating Green Chemistry Processes"

**Date:** 17th October'2019 (Thursday)

**Expected Participants:** President/VP-Biotechnology, Head/GM-Biocatalysis. Senior Scientists, Process Chemists, etc

**Expected No. of Participants:** 75+

- Objectives:**
1. To introduce the basic concept, fundamentals and potential applications of Biocatalysis.
  2. To share readily available & latest innovations on bio-catalysts, bio-catalysis technologies with successful case studies.
  3. To share bio-catalysis initiatives, best practices and case studies from industry.
  4. To discuss challenges of scaling-up biocatalysis processes and how to overcome them.

Timing	Speaker, Designation, Company	Topics	Context & Content/Comments
9:00 am - 9:30 am	Green ChemisTree Foundation Representatives	Welcome, Acknowledgement, Creating Context for IGCW2019, Launching IGCW App	
9:30 am - 10:15 am	Dr. Johannes Benkhoff, Sr. Vice President - Group Chemical Research, Clariant Produkte (Deutschland) GmbH, Germany	Day II Inaugural Keynote Address (Main Auditorium): <b>Going green in chemistry – the Clariant innovation journey</b>	Global trends in environment & sustainability, changing regulatory dynamics for chemical industry, expectations of MNCs from their supply chain, Clariant's initiatives & case study in Green Chemistry & Sustainability.
10:15 am - 11:00 am	<b>Tea/Coffee Networking Break, Visiting IGCW Expo. After break, move to Seminar Halls for parallel sessions.</b>		
11:00 am - 11:10 am	Welcome & Introduction to "Workshop on Biocatalysis" by Dr. Santosh Noronha, Asst. Professor, Dept. of Chemical Engineering, IIT-Bombay, India		
11:10 am - 12:00 pm	Prof. John Woodley, Dept. of Chemical & Biochemical Engg., Denmark Technical University, Denmark	Keynote: Methods for Evaluation and Improvement of Biocatalytic Processes to Enable Industrial Implementation	Introduction to Bio-Catalysis, its Potential, Scale-up and Commercialization, Bio-Catalysis in Flow Reactors
12:00 pm - 12:30 pm	Dr. Young Sung Yun, Head of Biotech Lab, Amicogen Inc., South Korea	Engineering of penicillin G acylases for the production of $\beta$ - lactam antibiotics on an industrial scale	Industrial Production of semi-synthetic antibiotics & intermediates using Biocatalysis
12:30 pm - 1:00 pm	Dr. Rajesh Kumar, Chair Pfizer WRD Green Chemistry Team & Associate Research Fellow, Biocatalysis Group, Pfizer Inc., USA	Biocatalysis Application to Pfizer Portfolio	Bio-Catalysis initiatives and case studies from Pfizer
1:00 pm - 2:15 pm	<b>Lunch Break, Visiting IGCW Expo</b>		
2:15 pm - 2:35 pm	Dr. Dinesh Nair, Director, Iosynth Labs Pvt. Ltd., India	Practical commercial implementation of biocatalysis- current toolbox of available enzymes & technologies	Experts provide examples of biocatalysis processes that are "scale-ready" and can be implemented fast. What types of reactions have "almost ready" solutions

2:35 pm - 2:55 pm	Mr. Suresh Kumar K, Project Leader - Biocatalysis, Advanced Enzymes Technologies Ltd., India	Importance of Biocatalysis in Chemical and Pharmaceutical industry	Experts provide examples of biocatalysis processes that are “scale-ready” and can be implemented fast. What types of reactions have “almost ready” solutions
2:55 pm - 3:15 pm	Dr. Swapnil Mohile, Business Development Manager - Biocatalysis & Chemicals, Novozymes South East Asia Pvt. Ltd., India	Biocatalysis – Sustainable Solution Across Industries	Experts provide examples of biocatalysis processes that are “scale-ready” and can be implemented fast. What types of reactions have “almost ready” solutions
3:15 pm - 3:25 pm	Dr. Alessandra Basso, Life Tech Manager, Purolite Lifesciences, UK	Use of immobilized enzymes in industry: overview of pharmaceutical, chemical and food applications	Industrial applications of Immobilized enzymes in Pharma and Specialty Chemicals
3:25 pm - 4:15 pm	Tea/Coffee Break, Visiting IGCW Expo		
4:15 pm - 4:35 pm	Dr. Pravin Kumar, Chief Scientific Officer, KCat Enzymatic Pvt. Ltd., India	From Laboratory to Industrial Scale: A Scaleup Frame Work for Biocatalysis	Computation methods/algorithms to improve enzymes & activity of immobilized enzymes to increase its reusability
4:35 pm - 4:55 pm	Dr. Santosh Naronha, Assistant Professor, Dept. of Chemical Engineering, IIT-Bombay, India		how to effectively develop biocatalysis processes in-house and scale it up, challenges, best practices
4:55 pm - 5:30 pm	<b>Moderator:</b> Dr. Santosh Noronha, <b>Panelists:</b> Dr. Guy Humphrey (MSD), Dr. Mofazzal Husain (Lupin), Dr. Manpreet Singh (DRL)	Panel Discussion: Barriers to implement of Biocatalysis Process and how to overcome them	
5:30 pm - 6:00 pm	Tea/Coffee Break, Visiting IGCW Expo		
6:00 pm - 6:30 pm	IGCW2019 Completion Ceremony		

**Industry Mentor:**

Dr. Dinesh Nair & Mr. Prasad Nair (Iosynth Team)

**IIT Mentor:**

Dr. Santosh Naronha, Assistant Professor, Dept. of Chemical Engineering, IIT-B, India

**Potential Speakers:**

