



# Indian Institute of Technology Indore

(Under Continuing Education Program )

## Short Term Course on

### Advanced Biological and Chemical Understanding of Disease Diagnostics and Therapeutics (22<sup>th</sup>-24<sup>th</sup> May 2018)



#### About IIT Indore:

IIT Indore located at Simrol, Khandwa Road, Madhya Pradesh, is one of the eight new Indian Institutes of Technology (IITs) established by the Ministry of Human Resources Development (MHRD), Government of India in 2008-09. The Discipline of Biosciences and Biomedical Engineering (BSBE) focuses on research in multidisciplinary areas of Biosciences and Biomedical Engineering. Recently IIT Indore is ranked 15<sup>th</sup> amongst all engineering universities and institutions in India and a very impressive 5<sup>th</sup> in teaching and research category by MHRD as per NIRF 2017.

#### About the program:

This short-term course is aimed to cover biology and chemical aspects in disease progression, diagnostic approaches and relevant therapeutics. Attendees will be exposed to the importance of interface of biology and chemistry in biomedical sciences. The key queries that we would like address through an interactive session: How the regulatory protein post-translational modifications (PTMs) fuels disease development? The crucial role of metabolomics and proteomics to identify, characterize PTMs. We will discuss in detail about the viruses and other infectious agents in human infection. How do the PTM and OMICS technologies help in the evaluation of infection associated disease pathogenesis? How does the pathogen hijack host cellular mechanism? Advancement of the biomedical field through nanotechnology in diagnosis and therapy of diseases will also be discussed. Further, we will also shed light on how metal ions play a crucial role in disease development and how can it be used in diagnostics as well as in therapeutics.

#### Program Objectives:

Understanding the underlying mechanistic details is the key for diagnosis and treatment of various chronic and lethal diseases. Modern chemical biology and biomedical approaches have fetched a new era for the disease diagnosis and therapeutics. While a growing interest in understanding the role of metal ions in acute as well as chronic diseases have emerged in last two decades, it goes without any saying that most of the diseases, if not all, proceed with a dynamic change in the genome, proteome and finally metabolome. At the same time, advancement in the diagnostics and novel targeted drug delivery systems, in particular utilizing nanotechnology is revolutionary. Taken together, this program is aimed to explore why a disease is caused and how one can cure it from a chemistry and biology perspective. This course will be helpful to the individuals from biology, medicine, chemistry and pharmacy background.

#### Who should attend:

- ❖ Undergraduate & postgraduate students
- ❖ Research scholars
- ❖ Faculty members from Colleges, Universities and other Institutes
- ❖ Industry personnel

#### Key areas to be covered:

- ❖ Biochemistry vs. Chemical biology
- ❖ Metabolomics and proteomics
- ❖ Protein post-translational modifications (PTMs)
- ❖ Virus infection in human
- ❖ Pathogen burden on host
- ❖ Cancer and infectious agents
- ❖ Nano medicines
- ❖ Diagnostics
- ❖ Metals in biology
- ❖ Metals in diagnostics
- ❖ Metals in medicines

#### Teaching faculty:

- ❖ Dr. Hem Chandra Jha, IIT Indore
- ❖ Prof. Suman Mukhopadhyay, IIT Indore
- ❖ Dr. Sushabhan Sadhukhan, IIT Indore
- ❖ Dr. Abhijeet Joshi, IIT Indore

#### Seats:

Limited seats are available

#### Important dates:

- ❖ Registration opens: 28<sup>th</sup> February 2018
- ❖ Registration closes: 5<sup>th</sup> May 2018

#### Registration:

Applicants	With accommodation (Three days )	Without accommodation
Students (PG & PhD)	INR 7,000	INR 5,000
Post doc	INR 8,000	INR 6,000
Faculty Members	INR 9,000	INR 7,000
Industry	INR 14,000	INR 10,000
Foreigners	USD 400/-	

#### Discount for Students: A group of 3 or more can avail 10% discount.

Name of Account Holder: IIT Indore

Bank Name: Canara Bank

Branch: IIT Indore, Simrol Campus Branch

Account Number: 1476101027440

IFSC Code: CNRB0006223

Swift Code: CNRBINBBISG

E mail id: hemcjh@iiti.ac.in

The registration fee can also be paid by Demand Draft in favor of: The Registrar, IIT Indore, Payable at Indore.