

## Instructions for Registration

“Green/Bio-polymers as renewable and sustainable alternatives to Petro-plastics: Energy-Environment-Healthcare Nexus” organized and hosted by the Department of Biotechnology, IIT Kharagpur in collaboration with the SICI & SPARC

### Instructions for participants:

1. Sign up, log in to <https://erp.iitkgp.ac.in/CEP/courses.htm>
2. Click on the “self sponsored” tab on the left and search for this course.
3. Click on “Apply Now” button. For more details visit: <http://bbdl.iitkgp.ac.in/sparc-Indo-CAN.html>
4. From the drop down box, select “SPONSORED CANDIDATE” for applicant category and course/registration fee type.

- There is **NO REGISTRATION / PROGRAM FEE** for attending the workshop.
- However, the participants will have to make their own travel arrangements.
- Accommodation request needs to be sent to: [sparc.bbdl@gmail.com](mailto:sparc.bbdl@gmail.com) (latest by February 20, 2023). Accommodation may be provided on payment basis (as per availability).
- The maximum number of participants will be 50 (Fifty) on first-come-first-serve basis. The list of selected participants will be notified to their personal e-mail address.

\* Participation in one of the Indo-US (24<sup>th</sup> Feb 2023), Indo-AUS (25<sup>th</sup> Feb 2023), Indo-CAN (26<sup>th</sup> Feb 2023) workshops will grant the access to attend other two events also.

## Key Resource Persons



**Prof. Sudip Kumar Rakshit**  
Canada Research Chair (Tier 1)  
Department of Chemical Engineering, Lakehead University, Canada



**Prof. Satinder Kaur Brar**  
Department of Civil Engineering, York University, Toronto, ON, Canada



**Prof. Prashant Mishra**  
Department of Biochemical Engineering & Biotechnology, IIT Delhi, India



**Dr. Santanu Dasgupta**  
Senior Vice President, Reliance Technology Group, Reliance Industries Limited, India



**Prof. Dipankar Chattopadhyay**  
Department of Polymer Science and Technology, University of Calcutta, India



**Dr. Krishna Chattopadhyay**  
Jadavpur University, India



**‘Green/Bio-polymers as renewable and sustainable alternatives to Petro-plastics: Energy-Environment-Healthcare Nexus’**

## Indo-CANADA Interdisciplinary Workshop

**Venue:** Gargi Auditorium (Vikramshila Complex), IIT Kharagpur



**February 25-26, 2023**

**Call for Participation**

**Last date of registration: February 22, 2023**

Organized in HYBRID MODE

In Collaboration With

Department of Biotechnology, IIT Kharagpur

Department of Biochemical Engineering & Biotechnology, IIT Delhi  
&  
Shastri Indo-Canadian Institute (SICI)



भारत सरकार  
 Government of India  
 भारतीय प्रौद्योगिकी संस्थान खड़गपुर  
 Indian Institute of Technology Kharagpur



## Workshop Coordinator



**Ramkrishna Sen**  
Professor and Former Head,  
Department of Biotechnology,  
Indian Institute of Technology Kharagpur





## Workshop Outline

The quest for sustainable resources to meet the demands of biopolymers and bioplastics rising rapidly for energy, environment and healthcare applications avoid the use of petroleum-based plastics. These biobased polymeric materials are having applicability in diverse areas like drug delivery/packaging agents, enhanced oil recovery, prosthetics, surgical implants and soft robotics. These materials offers the most readily implementable solution to non-petroleum organic molecules for the manufacture of bulk, fine and specialty chemicals, and polymers Biorefineries have come up as an integral component to the transformation of the chemical industry from petroleum refineries to bio-based chemical manufacturing.

This workshop aims to focus on pressing issues, recent advances, and the long-term outlook of sustainable biorefineries. Invited speakers from academia and industry, young scientists, budding technologists and potential entrepreneurs will discuss on science and engineering activities that will enable a transformation to the manufacturing of biopolymers and bioplastics through emerging technologies, practical implementation, and lessons learned from recent technological achievements towards the market of biopolymers and bioplastics.

This workshop will also brainstorm ideas for addressing and meeting some of the UN's Sustainable Development Goals, by taking a stock of the recent progresses on TRLs and SRLs of biotechnology and allied disciplines. It will be a platform to share and show-case one's research findings among the peers in the field from industry and academia. It will also be a good networking platform for the academics, company professionals and research students to interact and discuss on prospective collaborations, networking and idea translation.

It targets to provide a platform for industry leaders to share their experience and latest research in bioprocess R&D, scale-up, quality and analytics. The event this year have been thoughtfully curated and designed to forge synergy and nexus among the Science, Engineering, Technology, and Innovation. As an interface to connect various stakeholders of science with society, it will enable, empower and embolden the nation for inclusive growth and self-reliance and carry both a global as well as local (nation-specific) mandate.

## Key Topics

- ◆ Biopolymers
- ◆ Biosurfactants
- ◆ Bioplastics
- ◆ Biopolymer based drug delivery.
- ◆ Market Overview of Industry Trends and Drivers
- ◆ Green & sustainable process & technology
- ◆ Emerging End-Markets

## About IIT Kharagpur & Department of Biotechnology, IIT Kharagpur

The Indian Institute of Technology Kharagpur (IIT Kharagpur or IIT Kgp) is the First IIT that was established by the Government of India in 1951. It is recognized as an Institute of National Importance and recently, as the Institute of Eminence by the Government of India. The Institute was established with a mandate to produce world class engineers and scientists after our independence in 1947. Among all the IITs, IIT Kgp has the largest campus, largest number of Academic Units and the highest student enrolment. IIT Kharagpur launched M.Tech. program in Biotechnology & Biochemical Engineering way back in 1986. Wide appreciation of the program in the country and abroad led to introduction of an UG program in Biotechnology & Biochemical Engineering in 1994. Subsequently, the Department of Biotechnology was established in 1999 to run the UG and PG programs independently. Presently, the Department is running 4-Year B. Tech, 5-Year dual degree (B. Tech & M.Tech), 2-Year M.Tech and Ph.D programs in Biotechnology & Biochemical Eng. Currently there are about 250 UG & DD, 40 PG, 105 doctoral students and 15 PDFs working in two major thrust areas namely, healthcare biotechnology and bio-energy. The faculty members are engaged in translational R&D in the cutting-edge areas.

## About SPARC

Scheme for Promotion of Academic and Research Collaboration (SPARC) is a Ministry of Human Resource Development (MHRD), Gol initiative to improve research ecosystem in India. It supports national premier educational institutions by facilitating academic and research collaborations between Indian institutions and the best and selected institutions across the world's 28 nations. The collaborative educational networks will work on common issue of national or international relevance. It encourages international faculty, for Indian institution visits and short- / long-term stays to teach courses and conduct workshops for the benefit of Indian researchers and students.

In order to facilitate fundamental and socially relevant research in India, lot of emphasis is being laid to strengthen collaboration between Indian Research groups with Top research groups in the world, so that Indian scientists and students can interact with the finest minds in the world. With this objective in mind, MHRD (Ministry of Human Resource Development, Government of India) in 2015 launched GIAN (Global Initiative of Academic Networks), under which an International academician can visit an Indian Institute for two weeks to offer a course. The response was overwhelming, as apart from the course the Indian students and academicians got a chance to interact with the International Faculty. In the meantime, DST (Department of Science & Technology, Government of India) came up with another unique program in 2017, VAJRA (Visiting Advanced Joint Research), under which an International Scientist of Repute can spend longer duration in the country. However, it was realized that maximum benefit of a collaboration can be harvested only when the Indian Research group, particularly the students can be physically exposed to the world class research facilities and equipment available with Top international groups in their respective Institutes. As of now, such travel opportunities are limited, as there are no formal programs that generously support student visit for longer periods.

The major outcome of the SPARC initiative will be strong research collaboration between Indian Research groups with top research group in the leading Universities of the world, in areas that are at the cutting edge of science or with direct social relevance to the mankind, specifically India. The strong joint research should lead to tangible result that should include large number of high-quality research publications, solution to key national and international problems, development of niche courses, high quality text books and research monographs, imbibing of best practices from top international academicians and researchers, strong bilateral co-operation, and improved world reputation and ranking of Indian Institutions.



## Organizing Committee

### Patrons:

**Prof. Virendra Kumar Tewari**  
Director, IIT Kharagpur

**Prof. Amit Patra**  
Deputy Director, IIT Kharagpur

### Convener:

**Prof. Ramkrishna Sen**  
Professor, Department of  
Biotechnology, IIT-Kgp

### Local Organizing Committee Members:

**Dr. B. C. Meikap**  
Professor and Head, Department  
of Chemical Engineering, IIT-Kgp

**Dr. M. K. Maiti**  
Professor, Department of  
Biotechnology, IIT-Kgp

**Dr. Adinpunya Mitra**  
Professor, Department of  
Agricultural & Food Eng., IIT-Kgp

**Dr. M. M. Ghangrekar**  
Professor, Department of Civil  
Engineering, IIT-Kgp

**Dr. Sonali Sengupta**  
Associate Professor, Dept. of  
Chemical Engineering, IIT-Kgp

**Dr. Nikhil Kumar Singha**  
Professor, Rubber Technology  
Center, IIT-Kgp

**Dr. Damodar Maity**  
Professor, Department of Civil  
Engineering, IIT-Kgp

**Dr. Brajesh Dubey**  
Professor, Department of  
Civil Engineering, IIT-Kgp

**Dr. Debasis Sarkar**  
Associate Professor, Dept. of  
Chemical Engineering, IIT-Kgp



+91-3222-282248  
+91-3222-283752



+91-77618 27842  
+91-8910 907258



rksen@bt.iitkgp.ac.in  
sparc.bddl@gmail.com

## Objective of the Workshop

The main objective of "Green/Bio-polymers as renewable and sustainable alternatives to Petro-plastics: Energy-Environment-Healthcare Nexus" is to bring the UG, PG students, research scholars, faculty members / professionals & industry personnel, scientists and technologists working in life science and algal biotechnology under one umbrella to discuss recent advances and innovative technologies in the above-mentioned area.


## About Place and Climate

Kharagpur is about 130 km south-west of Kolkata and is well connected by rail and road with important metros like Delhi, Mumbai, Chennai, Bangalore and Kolkata and also with other important cities of India. It is known that Kharagpur Railway station has the world's third-longest railway platform. The distance from Kolkata airport (an International airport) to Kharagpur is about 130 km and is travelled in about 2.5 hours by car. The institute is about 10-15 minutes' drive (5 km) from Kharagpur railway station. The climate at Kharagpur during late February is pleasant. Temperature varies from 24-30 °C.

# Indo-Canada Interdisciplinary Workshop on 'Green/Bio-polymers as renewable and sustainable alternatives to Petro-plastics: Energy- Environment-Healthcare Nexus' (February 25-26, 2023)

**Venue: GARGI AUDITORIUM (VIKRAMSHILA COMPLEX), IIT KHARAGPUR**

## PROGRAMME GRID

DAY #1 – 25th February, 2023 (SATURDAY)		
Day-1	4:30 PM – 5:25 PM	Registration
Day-1	5:30 PM – 6:20 PM IST	<b>Introduction</b> – Prof. R. Sen, Coordinator & India-PI, followed by Lamp lighting <b>Welcome Note</b> – Prof. Prashant Mishra (Co-PI, IIT Delhi) <b>Opening Remarks</b> – Dr. Prachi Kaul (Director, Shastri Indo-Canadian Institute) <b>Speech by Chief Guest</b> – Prof. Sudip Kumar Rakshit, Lakehead University, Canada <b>Speech by Guest of Honour</b> – Prof. Satinder Kaur Brar, York, University, Canada <b>Welcome Speech</b> – Prof. D. Chakraborty (Asso. Dean – Outreach, IIT Kharagpur) <b>Inaugural Address</b> – Prof. Amit Patra (Deputy Director, IIT Kharagpur) <b>Vote of Thanks</b> – Prof. R. Sen, Coordinator & India-PI
Day-1	6:30 PM – 7:10 PM IST	<b>Workshop Plenary Lecture 1: Prof. Sudip Kumar Rakshit</b> Canada Research Chair Professor, Bioenergy & Biorefining Research Institute, Lakehead University, Thunder Bay, ON, Canada ( <b>Online</b> )
Day -1	7:15 PM – 7:55 PM IST	<b>Workshop Plenary Lecture 2: Prof. Satinder Kaur Brar</b> Professor and James & Joanne Love Chair in Environmental Engineering, Department of Civil Engineering, Lassonde School of Engineering, York University, Toronto, ON, Canada ( <b>Online</b> )
Day-1	8:00 PM – 9:30 PM	Dinner [Vikramshila Foyer]
DAY #2 – 26th February, 2023 (SUNDAY)		
Day-2	9:30 AM – 9:55 AM	Hi-Tea/Morning refreshments [Vikramshila Foyer]
Day-2	Technical Session: Advances in Green-polymer & Biorenewable R&D [Gargi Auditorium]	
Day-2	10:00 AM – 10:45 AM	<b>Workshop Plenary Lecture 3: Dr. Santanu Dasgupta</b> Senior Vice President, Reliance Technology Group, Reliance Industries Limited, Mumbai, India ( <b>Online</b> )
Day-2	10:50 AM – 11:35 AM	<b>Workshop Plenary Lecture 4: Prof. Prashant Mishra</b> Professor & Former Head, Department of Biochemical Engineering & Biotechnology, Indian Institute of Technology Delhi, India ( <b>Offline</b> )
Day-2	11:40 AM – 12:15 PM	<b>Workshop Keynote Lecture 1: Prof. Dipankar Chattopadhyay</b> Professor & Former Head, Department of Polymer Science & Technology, University of Calcutta, India ( <b>Offline</b> )
Day-2	12:20 PM – 12:50 PM	<b>Workshop Invited Lecture 2: Dr. Krishna Chattopadhyay</b> DST Women Scientist, Jadavpur University, India ( <b>Offline</b> )
Day-2	1:00 PM – 1:25 PM	Valedictory & Photo Session
Day-2	1:30 PM – 2:30 PM	Good Bye Lunch [Vikramshila Foyer]
 <b>THANKS SO MUCH FOR ATTENDING</b> 