

# **Innovating for a Sustainable Tomorrow**

A Joint Workshop by IIT Kanpur and Nazarbayev University

6-7<sup>th</sup> November 2025

A pivotal platform uniting the scientific expertise of IIT Kanpur and Nazarbayev University, and collectively tackle some of the world's most pressing environmental challenges. Collaboration is a key aim of this workshop.

## **Agenda**

**06/11/2025 (Day 1, Building Block C3, room 1009)**

08:30 – 09:00: Meeting and Networking

09:00 – 09:10: Welcome note by Vice Provost for Research and Innovation NU, Dr. Zhumabay Bakenov and Dean of SEDS, Dr. Elizabeth Arkhangelsky

09:10 – 09:20: From Vision to Impact: The NU Research Journey, **Prof. Shazim Memon**, Vice-Dean of Research, SEDS NU.

09:20 – 09:40: A Strategic Blueprint for Research and Collaboration at IIT Kanpur, **Prof. Ashish Garg**, IIT Kanpur

## **Group Photo**

09:50 – 10:15: **Prof. Amit Prashant**, Department of Civil Engineering, IIT Gandhinagar

10:15 – 10:40: Unsaturated soil mechanics for sustainable slope design, **Prof. Alfredo Satyanaga**, Department of Civil and Environmental Engineering, SEDS, NU.

10:40 – 11:05: Recent Developments in Solar Cells, **Prof. Ashish Garg**, Department of Sustainable Energy Engineering, IIT Kanpur

## **Break**

### **Session Chair: Prof. Anand Singh**

11:30 – 11:55: Research progress in sodium-ion batteries, **Prof. Aishuak Konarov**, Department of Chemical and Materials Engineering, SEDS, NU

11:55 – 12:20: Nanostructured Materials for Energy and Environment Applications, **Prof. Raju Kumar Gupta**, Department of Chemical Engineering, IIT Kanpur

12:20 – 12:45: From Discovery to Developments: Highlights from the Renewable Energy Laboratory, **Prof. Nurxat Nuraje**, Department of Chemical and Materials Engineering, SEDS, NU.

12:45 – 13:10: Development of Low-Carbon Energy Technology, **Prof. Yerbol Sabassov**, Department of Mechanical and Aerospace Engineering, SEDS, NU

13:10 – 13:20 Closing Remarks by **Prof. Dhawal Shah**, Department of Chemical and Materials Engineering, SEDS, NU.

## **End of the workshop**

**07 November 2025: Meeting with NU leadership, Lab visits, etc.**

## Profile of the Faculties coming from IITs

1. **Ashish Garg:** Ashish Garg is Professor and Founding Head (2020-now) of the Department of Sustainable Energy Engineering, IIT Kanpur. Founder and Professor-in-Charge (2023-Jul 2024) of the Kotak School of Sustainability, IIT Kanpur and Founder and Coordinator of the Chandrakanta Kesavan Center. His research interests are in the area of energy and electronic materials and their devices including scale-up, decarbonization, netzero, sustainability, recycling. The current topics of interest are: Energy Materials and Devices for Sustainable Solutions Solar photovoltaics: process development, materials development, perovskite cells, organic cells, tandem cells, Energy storage using batteries Materials for Green Hydrogen and energy harvesting devices and sensors for wearable electronics and IoT devices

<https://iitk.ac.in/new/ashish-garg>

2. **Raju Kumar Gupta:** Raju is full Professor at Department of Chemical Engineering, IIT Kanpur. He has over 200 publications and 12000 citations. He is recipient of several fellowships and awards, such as DST Inspire Faculty Award 2013, IAAM Young Scientist Award 2014, IEI Young Engineer Award (2014-15) and IAAM Scientist Medal 2017. His research focuses on the development of multifunctional hybrid nanostructures for energy and environmental applications.

<https://iitk.ac.in/new/raju-kumar-gupta>

3. **Anand Singh:** Anand Singh is full Professor at IIT Kanpur in the Department of Chemistry, and Department of Sustainability. His research focuses the development of new synthetic methods, and the design and synthesis of materials for solar photovoltaic devices

<https://iitk.ac.in/new/anand-singh>; <https://www.anandsinghiitk.com/>

4. **Amit Prashant:** Dr. Amit Prashant is Professor at the Department of Civil Engineering, IIT Gandhinagar. His research interests are constitutive modeling for granular materials, numerical modeling of geotechnical structures, Earthquake geotechnical engineering, applications of geosynthetics

<https://iitgn.ac.in/faculty/civil/fac-amit>