



5-8 JUNE 2023

International workshop on technologies for sustainable development



The International Workshop on Technology for Sustainable Development brings experts from industry and scholars to share their knowledge in the field of energy, materials, wastewater engineering and buildings to identify challenges to the development, viable solutions to help put in place the essential technologies to tackle global issues of climate change and resource depletion. Students will learn from experts.

Program

5 June 2023 (Monday)	
Theme Environment & energy 1	
08:30-09:00	Registration
09:00-9:30	Welcome: Prof R K Calay (Chairperson Prof Fasil & Prof RK Sen)
9:30-9:45	Tea break
9:45-10:30	Lecture 1. Prof Sengupta: Energy Efficient Wastewater Recovery and Reuse in Cities/Metropolis through Use of CO2 Captured from the Atmosphere'
10:30-11:15	Lecture 2 Prof Satoshi Microbial fuel cell
11:15-11:45	Discussion Expert Panel comments
11:45-12:45	Lunch Break
12:45-13:30	Lecture 3 Prof Ghangrekar Bio-electrochemical wastewater treatment technologies to facilitate reuse of treated water and resource recovery
13:30-14:00	Triya Mukherjee: Building a sustainable future with circular bioeconomy and bio-refinery (1)
14:00-14:30	Gorakhnath Jadhav: Portable bioelectrical toilet for onsite wastewater treatment and electricity generation (2)
15:00-15:15	Tea Break
15:15-15:30	Q & A
15:30-15:45	Panel Discussion
Free time Dinner on own	

6 June 2023 (Tuesday)	
Theme Environment & Energy-2	
08:30-8:45	Introduction: By Prof R K Calay (Chair Prof Satoshi, Prof Sengupta)
08:45:9:30	Lecture 4 Prof RKS en Biofuels, Bioelectricity and Value-added products via Waste Valorization & Carbon Capture in an Microalgal Biorefinery Model
09:30-9:45	Tea beak
9:45-10:15	Harishankar: Building a sustainable future with circular bioeconomy and bio-refinery
10:00:10:30	Sundipan Bhowmick: Towards Sustainable Production of Engineered Activated Biochar from defatted algal biomass of Chlorella minutissima for Application as cathode catalyst in MFC"
10:30-11:00	Manish: Fuel cell driven Electrochemiluminescence PoC Devices for Biomarker Detection.
11:00-11:30	Sai Kumar: Microfluidics driven fuel cells for energy harvesting
11:30 :11:45	Discussion Q & A
11:45-12:45	Lunch Break
12:45:15:00	Researchers' Session Chair by Mohamad & Harpal Singh) (Parallel Project meeting)
15:00:15:15	Tea Break
15:15-15:45	Discussion & end of the day
18:30: 20:30	Project Dinner
Free time Dinner on own	

7 June 2023	
Theme: Construction & Emerging Technologies	
08:30-08:45	Introduction by Raj Calay (Chairperson – Prof Mustafa & Prof Ghangrekar)
8:45-9:30	Prof. N-Hiro Watanabe: A Data-Driven Design Approach to Public Spaces in Snowy and Cold Cities
09:30-9:45	Tea break
9:45-10:15	Harpal Singh – Asset management & condition monitoring
10:15: 10:45	HanYang : Research on Carbon Reduction of Residential Buildings in Severe Cold Regions Based on Renovation of Envelope
10:45:11:45	Student presentations (Chair by Fasil & Subhashis) / parallel meetings with other faculty
11:45:12:00	Panel Discussion & Q & A
12:00-13:00	Lunch
13:00:15:00	Interactive Session / parallel meetings with other faculty (Moderator Fasil & Subhashis)
15:00 :15:15	Tea break
15:15:15:30	Closing & way forward (R K Calay)
	Free time Dinner on own
8 June 2023 (Thursday)	
9:00-13:00	Meeting Venue TBD- Field excursions
	Afternoon free time
9 June 2023 (Friday)	
	Delegates leave

Our expert speakers:



Lehigh University, US

Prof Arup K. Sengupta (P.C. Rossin Professor) in Lehigh University is internationally recognized for developing sustainable technologies and new materials. SenGupta authored well over one hundred peer-reviewed journal papers and is the recipient of 12 US patents. SenGupta's current research thrusts address some critical issues related to water-energy nexus and identifying strategies to overcome the adverse impact of climate change.



IITKGP, India

Prof. Dr. Ramkrishna Sen is a Professor & Head, Department of Biotechnology; Chairperson– School of Bioscience; Chairman–Central Research Facility (Life Science) and Joint Faculty, P K Sinha Center for Bioenergy-&-Renewables, IIT Kharagpur, India. He has worked as Deputy Manager-&-Manager (R&D-Biotech) in Cadila Pharmaceuticals for three years. He served as a Fulbright Visiting Professor in Columbia University, New York, USA. He has over 230 publications and 15 patent applications one in US, one European and one PCT to his credit.



Hokkaido University, Sapporo, Japan

Professor Satoshi Okabe is working at the Faculty of Engineering. His current research interests are Ecophysiology of anaerobic ammonium-oxidizing (anammox) bacteria and engineering applications, development of bioelectrochemical water treatment processes, analysis of ecological structures and functions of multi-species biofilms and Construction of biotic-abiotic hybrid artificial photosynthesis system. He regularly delivers International Lecture Series on wastewater Management & Technology and environmental engineering topics.

Hokkaido University, Sapporo, Japan

Dr Norihiro Watanabe is assistant professor at the Division of Architecture, and environmental design. He has published extensively on the topics of Urban planning, people perception of design of buildings, open spaces particularly in cold climate and winter cities.



IITKGP, India

Professor M. Ghangrekar at Department of Civil Engineering is B.E. Civil Engineering, MTech. Environmental Engineering and Ph.D. Environmental Science and Engineering. His research areas are wastewater treatment and reuse, anaerobic wastewater treatment, bioelectricity recovery, catalyst development and membrane separator development for application in microbial fuel cell and enhancing electrogenesis in MFC. He is one of the most published researchers in the field of MFC.

Partner Institutions:

- Birla Institute of Technology & Science Pilani, Hyderabad Campus, India
- CSIR–Indian Institute of Chemical Technology, Hyderabad
- DYPatil, Pune, India
- Hokkaido University, Sapporo, Japan.
- Indian Institute of Technology Kharagpur, Kharagpur, West Bengal, India
- Lehigh University (LU) Bethlehem, Pennsylvania, US
- MultiConsult, Narvik
- Sintef Nord, Narvik

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<https://www.project-peers.com/>
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