

E-SEMINAR ON “ADVANCING FRONTIERS OF KNOWLEDGE ON CLIMATE ACTION: CROSS-SECTIONAL APPROACHES FOR MITIGATION AND RESILIENCE”

The seminar featured various sessions and highlights of studies on the impact of climate change on critical infrastructure and energy-environment-economy implications of transportation, which were jointly undertaken by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), IIT Gandhinagar (IITGN) and PricewaterhouseCoopers (PwC). The studies

were undertaken as a part of the project “Supporting the Institutionalisation of Capacities on Climate Change Studies and Actions” (ICCC), implemented by the Ministry of Environment, Forest and Climate Change (MoEFCC) and GIZ. The project aims to develop capacities in climate protection, resilience, Nationally Determined Contributions (NDC) implementation, and transdisciplinary issues. Nearly 100 scientists, scholars and practitioners attended the seminar, which was hosted by **Prof Vimal Mishra**, Associate Professor, Civil Engineering and Earth Sciences and Co-Coordinator of Dr Kiran C Patel Centre for Sustainable Development (KPCSD).

SUSTAINABILITY SEMINAR SERIES (SSS)

The Centre organised five e-seminars between July through December 2021 as part of the Sustainability Seminar Series. The webinars covered topics related to climate change, energy, food security, conservation, environmental and human health by speakers from renowned organisations. Nearly 500 people attended the webinar series from India and several locations across the globe, such as Antigua and Barbuda, Australia, Bangladesh, Canada, Chile, China, Germany, Indonesia, Japan, Korea, Nepal, Pakistan, Singapore, Switzerland, Taiwan, UAE, UK, and the USA. Details of the e-seminars organised are as follows:

- **Mr Anand Kumar**; Professor of Practice, Electrical Engineering, IIT Gandhinagar; Demand-side management for a sustainable energy future
- **Mr Vivek Menon**; Founder and Executive Director, Wildlife Trust of India; Conservation: The art of possible
- **Prof Matti Kummu**; Associate Professor, Department of Built Environment, Aalto University; Opportunities towards sustainable food futures
- **Prof Michael Bergin**; Sternberg Family Professor of Civil and Environmental Engineering, Duke University; Low-cost sensors and data analytics: The future of improving environmental and human health
- **Prof Matthew Huber**; Professor, Earth and Atmospheric Sciences, Purdue University; Through a model Darkly: Insights into the dynamics of warm climates, past and future



VISIT OF LEH LADAKH OFFICIALS

A 13-member delegation from Leh and Kargil districts of Union Territory Ladakh visited IITGN on October 13, 2021, to understand low-cost, eco-friendly domestic wastewater management at IITGN and to explore various options of sustainable systems for the treatment of sewage for the extreme cold climate of Ladakh. The delegation included administrative officers and councillors of the Ladakh Autonomous Hill Development Council (LAHDC), elected representatives of Leh and Kargil towns, chairperson of the Block Development Council, executive officers and ward members of Leh and Kargil Municipal Committees, engineers of their Public Health Engineering Department, and urban planner of Ladakh Ecological Development Group (LEDeG). LEDeG, Urban Management Centre (UMC), Ahmedabad and KPCSD facilitated this exposure visit.

Mr Sudhir Kumar Arora, Professor of Practice in Civil Engineering, hosted the delegates. The delegation was briefed about low-cost sanitation technology, the Root Zone Method (RZM) used at IITGN and also taken for site visits to the Water Treatment Plant and Sewage Treatment Plant. IITGN offered to help the delegation develop appropriate methodology and treatment schemes after field trials, pilot projects and lab studies.

IBM DESIGN THINKING WORKSHOP

KPCSD, in collaboration with IIT Gandhinagar Innovation and Entrepreneurship Center (IIEC), organised a Design Thinking Workshop by IBM India Software Labs on December 8, 2021. The event explored potential areas of partnerships. Six teams, each of five students, faculty and IBM representatives, participated in brainstorming sessions to identify potential environmental or climate change-related challenges.



Q & A



with **Prof Naran Pindoriya**
Associate Professor
Electrical Engineering

THE 3 D'S OF ENERGY SECTOR: DECARBONISATION, DECENTRALISATION AND DIGITISATION

What is the 3 D's importance in achieving India's ambitious renewable energy targets?

The socio-economic vision of implementing 3 D's promises a new era in the energy sector as India strives to achieve an ambitious target of Renewable Energy (RE) capacities of 227 GW by 2022, including 114 GW of solar capacity addition and 67 GW of wind power capacity. The 3D's are: Decarbonisation, which involves producing energy without emitting greenhouse gases, reducing air pollution, diversifying energy sources, and decreasing reliance on imported fuels; Decentralisation seeks to locate energy production closer to the site of energy consumption and protect the grid against natural disasters and cyberattacks; Digitisation helps identify energy users and enables cost-effective delivery at the right time and place.

Which are some of the key initiatives that have acted as growth drivers in the energy sector?

The Government of India has taken several initiatives to boost the Indian power sector, including those related to green energy and operational and financial reforms, such as Power for All, High-volume transport and electric vehicle integration and Demand Side Management. Various operational schemes and programmes aimed at improving power supply and system performance include Pradhan Mantri Sahaj Bijli Har Ghar Yojana, PM-KUSUM - Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan, etc. There are several financial reforms as well, such as Ujwal DISCOM Assurance Yojana (UDAY), National Electricity Fund (NEF).

What are the significant challenges of the renewable energy sector that need to be addressed on a priority basis?

Several obstacles stand in the way of the wider adoption of

renewable energy. Constructing and installing renewable energy facilities like solar or wind farms require large upfront capital investment. Although RE is gaining momentum, it still encounters tough competition from the fossil fuel industry, which is a dominant player in supplying energy. Grid integration of RE is one of the biggest challenges as the existing grids need to be upgraded or modified.

What are the major challenges and limitations related to commercial viability faced by the prosumers?

Prosumers generate electricity with generation sources like solar panels, batteries, etc. One of the obstacles to becoming prosumers is the high capital investment required to acquire generating facilities. Moreover, fair compensation is expected after investing in generation facilities. Prosumers are often discouraged from investing in distributed energy sources due to the disparity in consumption and injection rates.

What are the different compensation schemes to support consumers having distributed renewable energy resources?

Pilot projects are being conducted by power distribution companies to enable community-level energy trading. For example, BSES Rajdhani Power Limited in Delhi and Uttar Pradesh Power Corporation Limited in Uttar Pradesh have initiated blockchain-based Peer-to-Peer (P2P) energy trading pilot projects. P2P energy trading motivates electricity users to integrate distributed renewable energy resources by allowing them to trade electricity at a mutually agreed-upon price.

Prof Pindoriya leads the Power Systems and Smart Grid Lab at IITGN. His research interests include the electricity market, smart distribution grid/ microgrids, grid integration of distributed energy resources and energy management.

SPOTLIGHT

IIT Gandhinagar was featured in the report "Universities facing Climate Change and Sustainability" commissioned by Körber-Stiftung in preparation for the Global University Leaders Council Hamburg 2021

Universities play a crucial role in climate action and sustainable development through their practices and teaching, research, and innovation initiatives. The study analyses and compares

engagement of higher educational institutions across the world in these domains and presents cross-national lessons learned and recommendations for future action. Country cases in the report covered seven countries, including Brazil, Germany, India, Japan, South Africa, the United Kingdom and the United States of America. A case study from the Indian Institute of Technology, Gandhinagar was included in the study. For more details on the study, please click here: <https://csd.iitgn.ac.in/announcements/>.

RESEARCH

Eight research and consultancy projects relating to sustainable development were initiated at the institute during July to December 2021.

- **Ambika Aiyadurai**, Mangroves stories in Gujarat; *Social Science Research Council (SSRC)*
- **Ambika Aiyadurai**, History, Science & Technology of Wildlife Hunting and Trapping in Arunachal Pradesh; *Indian National Science Academy (INSA)*
- **Udit Bhatia**, Investigating water ingressing and resulting interactions in underground infrastructures in Dholera; *Dholera Industrial City Development Limited (DIDCL)*
- **Udit Bhatia**, Regression Analysis for Sewage Treatment Plant Civil Works, Project Facilities, and EMI; *DIDCL*
- **Nishaant Choksi**, Mobility and multilingualism in the Indian Ocean: Impacts of global ecological change on local society, *SSRC*
- **Bhaskar Datta**, Plant-based meats; *Blasto Research Private Limited*
- **Vimal Mishra**, Integrated real time hydroclimatic framework and forecasting system for Gujarat, *United Nations Children's Fund (UNICEF)*
- **Sameer Patel**, Investigating air quality and its dynamics in built environments in urban India; *Department of Science and Technology - Science and Engineering Research Board (DST-SERB)*

IITGN faculty published nearly 50 journal papers, books/ book chapters, conference papers, or newspaper/ magazine articles in various sustainability areas during July to December 2021:

Water

- Kuroda, Keisuke; Li, Cong; Dhangar, Kiran and Kumar, Manish, "Predicted occurrence, ecotoxicological risk and environmentally acquired resistance of antiviral drugs associated with COVID-19 in environmental waters", *Science of The Total Environment*, DOI: 10.1016/j.scitotenv.2021.145740, Jul 2021
- Sahoo, Deepika; Saxena, Himanshu; Nazirahmed, Sipai; Kumar, Sanjeev; Sudheer, A. K.; Bhushan, Ravi; Sahay, Arvind and Singh, Arvind, "Role of eddies and N2 fixation in regulating C:N:P proportions in the Bay of Bengal", *Biogeochemistry*, DOI: 10.1007/s10533-021-00833-4, Jul 2021
- Arora, Sudipti; Nag, Aditi; Rajpal, Ankur; Tyagi, Vinay Kumar; Tiwari, Satya Brat; Sethi, Jasmine; Sutaria, Devanshi; Rajvanshi, Jayana; Saxena, Sonika; Shrivastava; Sandeep Kumar; Srivastava, Vaibhav; Gupta, Akhileendra Bhushan; Kazmi, Absar Ahmed and Kumar, Manish, "Imprints of lockdown and treatment processes on the wastewater surveillance of SARS-CoV-2: a curious case of fourteen plants in Northern India", *Water*, DOI: 10.3390/w13162265, vol. 13, no. 16, Aug 2021
- Malakar, Arindam; Singh, Rajesh; Westrop, Jeffrey; Weber, Karrie A.; Elofson, Christopher N.; Kumar, Manish and Snow, Daniel D., "Occurrence of arsenite in surface and groundwater associated with a perennial stream located in Western Nebraska, USA", *Journal of Hazardous Materials*, DOI: 10.1016/j.jhazmat.2021.126170, vol. 416, Aug 2021
- Sharma, Pradeep Kumar; Rausa, Kalpana; Rani, Anju; Mukherjee, Santanu and Kumar, Manish, "Biopurification of dairy farm wastewater through hybrid constructed wetland system: groundwater quality and health implications", *Environmental Research*, DOI: 10.1016/j.envres.2021.111426, vol. 200, Sep 2021
- Singh, Ashwin; Gogoi, Anandita; Saikia, Parijat; Karunanidhi, D. and Kumar, Manish, "Integrated use of inverse and biotic ligand modelling for lake water quality resilience estimation: a case of Ramsar wetland, (Deepor Beel), Assam, India", *Environmental Research*, DOI: 10.1016/j.envres.2021.111397, vol. 200, Sep 2021
- Bhagat, Chandrashekhar; Khandekar, Ashwini; Singh, Ashwin; Mohapatra, Pranab K. and Kumar, Manish, "Delineation of submarine groundwater discharge and seawater intrusion zones using anomalies in the field water quality parameters, groundwater level fluctuation and sea surface temperature along the Gujarat coast of India", *Journal of Environmental Management*, DOI: 10.1016/j.jenvman.2021.113176, vol. 296, Oct 2021
- Kumar, Sumant; Kumar, Vinod; Saini, Ravi K.; Pant, Neeraj; Singh, Rajesh; Singh, Ashwin; Kumar, Sudhir; Singh, Surjeet; Yadav, Brijesh K.; Krishan, Gopal; Raj, Ameesha; Maurya, N. S. and Kumar, Manish, "Floodplains landforms, clay deposition and irrigation return flow govern arsenic occurrence, prevalence and mobilization: a geochemical and isotopic study of the mid-Gangetic floodplains", *Environmental Research*, DOI: 10.1016/j.envres.2021.111516, vol. 201, Oct 2021
- Kumar, Manish; Joshi, Madhvi; Shah, Anil V.; Srivastava, Vaibhav and Dave, Shyamnarayan, "Wastewater surveillance-based city zonation for effective COVID-19 pandemic preparedness powered by early warning: a perspectives of temporal variations in SARS-CoV-2-RNA in Ahmedabad, India", *Science of The Total Environment*, DOI: 10.1016/j.scitotenv.2021.148367, Oct 2021
- Bhagat, Chandrashekhar; Mohapatra, Pranab K. and Kumar, Manish, "Unveiling the extent of salinization to delineate the potential submarine groundwater discharge zones along the North-western coast of India", *Marine Pollution Bulletin*, DOI: 10.1016/j.marpolbul.2021.112773, vol. 172, Nov 2021
- Kumar, Manish; Kuroda, Keisuke; Joshi, Madhvi;

Bhattacharya, Prosun and Barcelo, Damia, "First comparison of conventional activated sludge versus root-zone treatment for SARS-CoV-2 RNA removal from wastewaters: statistical and temporal significance", *Chemical Engineering Journal*, DOI: 10.1016/j.cej.2021.130635, vol. 425, Dec 2021

Pollution and Waste Management

- Pranay, V.; Ojha, S.; Raghavendra, G.; Dheeraj, G. and Anjali, A., "Evaluation of mechanical and tribological properties of biowaste and biowaste based silica particulate epoxy composites", *Silicon*, DOI: 10.1007/s12633-021-01227-9, Jul 2021
- Kumar, Raghavendra; Pandit, Priti; Kumar, Dinesh; Patel, Zarna; Pandya, Labdhi; Kumar, Manish; Joshi, Chaitanya and Joshi, Madhvi, "Landfill microbiome harbour plastic degrading genes: A metagenomic study of solid waste dumping site of Gujarat, India", *Science of The Total Environment*, DOI: 10.1016/j.scitotenv.2021.146184, vol. 779, Jul 2021
- Stockman, Tehya; Zhu, Shengwei; Kumar, Abhishek; Wang, Lingzhe; Patel, Sameer; Weaver, James; Spede, Mark; Milton, Donald K.; Hertzberg, Jean; Toohy, Darin; Vance, Marina; Srebric, Jelena and Miller, Shelly L., "Measurements and simulations of aerosol released while singing and playing wind instruments", *ACS Environmental Au*, DOI: 10.1021/acsenvironau.1c00007, Aug 2021
- Zadafiya, Kishan; Shah, Prassan; Shokrani, Alborz and Khanna, Navneet, "Recent advancements in nano-lubrication strategies for machining processes considering their health and environmental impacts", *Journal of Manufacturing Processes*, DOI: 10.1016/j.jmpro.2021.05.056, vol. 68, Aug 2021
- Sankhyan, Sumit; Patel, Sameer; Katz, Erin F.; DeCarlo, Peter F.; Farmer, Delphine K.; Nazarov, William W. and Vance, Marina E., "Indoor black carbon and brown carbon concentrations from cooking and outdoor penetration: insights from the HOMEChem study", *Environmental Science: Processes & Impacts*, DOI: 10.1039/d1em00283j, Sep 2021
- Srivastava, Apeksha, "COVID-19's impact on environment: Heroic or Villainous?", *Cogito137*, Sep 5, 2021
- Kumar, Abhishek; Bhattacharya, Tanushree; Shaikh, Wasim Akram; Roy, Arpita; Mukherjee, Santanu and Kumar, Manish, "Performance evaluation of crop residue and kitchen waste-derived biochar for eco-efficient removal of arsenic from soils of the Indo-Gangetic plain: a step towards sustainable pollution management", *Environmental Research*, DOI: 10.1016/j.envres.2021.111758, vol. 200, Sep 2021
- Roy, A. and Chakraborty, A. L., "QCL-based open-path, single-pass measurement of ambient carbon monoxide using R1f/d11 WMS", *IEEE Photonics Technology Letters*, 33(18), 982-985, <https://doi.org/10.1109/LPT.2021.3081708>
- Patel, Sameer; Rim, Donghyun; Sankhyan, Sumit; Novoselac, Atila; and Vance, Marina E., "Aerosol dynamics modeling of sub-500 nm particles during the HOMEChem study", *Environmental Science: Processes & Impacts*, <https://doi.org/10.1039/D1EM00259G>, Oct 2021
- Sankhyan, Sumit; Heinselman, Karen N.; Ciesielski, Peter N.; Barnes, Teresa; Himmel, Michael E.; Teed, Hannah; Patel, Sameer and Vance, Marina E., "Filtration performance of layering masks and face coverings and the reusability of cotton masks after repeated washing and drying", *Aerosol and Air Quality Research*, DOI: 10.4209/aaqr.210117, vol. 21, Nov 2021

Climate Change

- Ossandón, Álvaro; Rajagopalan, Balaji; Lall, Upmanu; J. S. Nanditha and Mishra, Vimal, "A Bayesian hierarchical network model for daily streamflow ensemble forecasting", *Water Resources Research*, DOI:

10.1029/2021WR029920, Aug 2021

- Tapas, Mahesh R.; Kumar, Uday; Mogili, Sudhakar and Jayakumar, K. V., "Development of multivariate integrated drought monitoring index (MIDMI) for Warangal region of Telangana, India", *Journal of Water and Climate Change*, DOI: 10.2166/wcc.2021.065, Aug 2021
- Karde, Vikram and Ghoroi, Chinmay, "Humidity induced interparticle friction and its mitigation in fine powder flow", *Particulate Science and Technology*, DOI: 10.1080/02726351.2021.1977746, Sep 2021
- Dave, Raviraj; Subramanian, Srikrishnan N. and Bhatia, Udit, "Extreme precipitation induced concurrent events trigger prolonged disruptions in regional road networks", *Environmental Research Letters*, DOI: 10.1088/1748-9326/ac2d67, Oct 2021
- Dangar, Swarup and Mishra, Vimal, "Natural and anthropogenic drivers of the lost groundwater from the Ganga river basin", *Environmental Research Letters*, DOI: 10.1088/1748-9326/ac2ceb, Oct 2021
- Hao, Chen; Yunus, Ali P.; Siva Subramanian, Srikrishnan and Avtar, Ram, "Basin-wide flood depth and exposure mapping from SAR images and machine learning models", *Journal of Environmental Management*, DOI: 10.1016/j.jenvman.2021.113367, vol. 297, Nov 2021
- Christian, Jordan I.; Basara, Jeffrey B.; Hunt, Eric D.; Otkin, Jason A.; Furtado, Jason C.; Mishra, Vimal; Xiao, Xiangming and Randall, Robb M., "Global distribution, trends, and drivers of flash drought occurrence", *Nature Communications*, DOI: 10.1038/s41467-021-26692-z, vol. 12, no. 1, Nov 2021
- Bhardwaj, Kunal and Mishra, Vimal, "Drought detection and declaration in India", *Water Security*, DOI: 10.1016/j.wasec.2021.100104, vol. 14, Dec 2021
- Mishra, Vimal and Aadhar, Saran, "Famines and likelihood of consecutive megadroughts in India", *npj Climate and Atmospheric Science*, DOI: 10.1038/s41612-021-00219-1, vol. 4, no. 1, Dec 2021.
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- Kushwaha, Anuj Prakash; Tiwari, Amar Deep; Dangar, Swarup; Shah, Harsh; Mahto, Shanti Shwarup and Mishra, Vimal, "Multimodel assessment of water budget in Indian sub-continental river basins", *Journal of Hydrology*, DOI: 10.1016/j.jhydrol.2021.126977, vol. 603, Dec 2021

Energy

- Kumar Katiyar, Nirmal; Biswas, Krishanu; Yeh, Jien-Wei; Sharma, Sudhanshu and Tiwary, Chandra Sekhar, "A perspective on the catalysis using the high entropy alloys", *Nano Energy*, DOI: 10.1016/j.nanoen.2021.106261, Oct 2021
- Sharma, Meenu and Gaur, Anurag, "Emerging materials for high-performance supercapacitors", *Energy storage and conversion devices*, DOI: 10.1201/9781003141761-4, Boca Raton: CRC Press, pp. 71-97, Oct 2021, ISBN: 9780367694258
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- Naeem, Sumayyah; Naeem, Farah; Mujtaba, Jawayria; Shukla, Ashish Kumar; Mitra, Shirsendu; Huang, Gaoshan; Gulina, Larisa; Rudakovskaya, Polina; Cui, Cui; Tolstoy, Valeriy; Gorin, Dmitry; Mei, Yongfeng; Solovev, Solovev and Dey, Krishna Kanti, "Oxygen generation using catalytic

nano/micromotors”, *Micromachines*, DOI: 10.3390/mi12101251, vol. 12, no. 10, Oct 2021

- Valerino, Michael; Ratnaparkhi, Aniket; Ghoroi, Chinmay and Bergin, Mike, “Seasonal photovoltaic soiling: analysis of size and composition of deposited particulate matter”, *Solar Energy*, DOI: 10.1016/j.solener.2021.08.080, vol. 227, pp. 44-55, Oct 2021
- Shastri, Hetvi and Batra, Nipun, “Neural network approaches and dataset parser for NILM toolkit”, *BuildSys'21: Proceedings of the 8th ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation*, Coimbra, PT, Nov 17-18, 2021
- Sharma, Meenu and Bhargav, Atul, “Iron tungsten nanorods electrode with high capacitance: an extraordinary cycling stability for durable aqueous supercapacitors”, *Energy & Fuels*, DOI: 10.1021/acs.energyfuels.1c03102, Dec 2021
- Tiwari, Abhishek and Pindoriya, Naran M., “Automated Demand Response for Residential Prosumer with Electric Vehicle and Battery Energy Storage System”, *9th International Conference on Power Systems 2021 (ICPS 2021)*, IIT Kharagpur, Dec 16-18, 2021

2021), IIT Kharagpur, Dec 16-18, 2021

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- Hasan, Syed Nafiz; Singh, Satish Kumar and Pindoriya, Naran M., “Study of Optimally Located Electric Vehicle Charging Stations for Frequency Control Service in Distribution Network”, *9th International Conference on Power Systems 2021 (ICPS 2021)*, IIT Kharagpur, Dec 16-18, 2021

Natural Resources, Wildlife and Ecosystems

- Aiyadurai, Ambika, “The real sherni: how Avni put the spotlight on the complex nature of tiger conservation in India”, *Scroll.in*, Jul 5, 2021
- Singh, Ashwin and Kumar, Manish, “Depicting the seasonal and spatial sensitivity of anthropogenic nutrient enrichment on phytoplankton in the Bay of

Bengal, India”, *Marine Pollution Bulletin*, DOI: 10.1016/j.marpolbul.2021.112554, vol. 169, Aug 2021

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- Aiyadurai, Ambika and Banerjee, Sayan, “Understanding borderlands through elephant corridors in the Yunnan–Myanmar–Bengal landscape”, in *Yunnan–Burma–Bengal corridor geographies*, DOI: 10.4324/9781003094364-7, London: Routledge India, pp. 85-104, Sep 2021, ISBN: 9780367556228
- Aiyadurai, Ambika and Ingole, Prashant, “Invisibility of caste in environmental studies”, *Indian Express*, Nov 29, 2021

EDUCATION

Nearly 15 online short courses, training programmes, workshops, conferences and lectures were organised by the institute on a wide range of topics related to sustainable development.

Short courses and training programmes

- Management of Domestic Wastewater - Conveyance, Treatment and Reuse: Paradigm Shift in Approach by **Mr Sudhir K Arora**, Professor of Practice, Civil Engineering, IITGN, on Thursdays, Fridays and Saturdays from August 20 to September 24
- Demand Side Management & Energy Efficiency: Policies & Regulations by **Mr Anand Kumar**, Professor of Practice, Electrical Engineering, IITGN, on Sundays, Mondays and Wednesdays from August 29 to September 19
- Management of Domestic Wastewater for external practising engineers from various State Government Departments by **Mr Sudhir K Arora**, Professor of Practice, Civil Engineering, IITGN, from September 6 to 17
- Renewable Energy Future and Flexibility by **Prof Naran Pindoriya**, Associate Professor, Electrical Engineering, IITGN, from September 22 to 24
- Electricity Regulations in India by **Mr Anand Kumar**, Professor of Practice, Electrical Engineering, IITGN, from October 15 to November 16
- Management of Domestic Wastewater by **Prof Ravi Sastri Ayyagari**, Assistant Professor, Mechanical Engineering, from November 15 to 19

Workshops, conferences and lectures

- Workshop on Human-animal Relations at the Margin: A Quest for Social Justice on August 17, 18 and 20, sponsored by ICSSR and coordinated by **Prof Ambika Aiyadurai** and **Prashant Ingole** (PhD Scholar)

- Alumni Masterclass on Smart Electric Vehicles and its energy sources by **Mr Kislay Pankaj** (BTech/EE/2013), Chief Technology Officer (CTO), Micelio-Electric Vehicles, Bangalore on August 28
- Design innovation for humanity and sustainability by **Mr Amit Inamdar** (Industrial Designer, Educator & Social Entrepreneur), Founder-Director of ‘PlusONE Initiative’ on August 28
- Theory and methodologies to assess and enhance adaptive resilience in infrastructure systems, Sabarmati Young Researcher Seminar by **Dr Prerna Singh**, Postdoctoral Researcher, School of Civil and Environmental Engineering, Georgia Institute of Technology on September 16
- Book Discussion on *Uncivil City: Ecology, Equity and the Commons in Delhi* (Sage 2020) by **Prof Amita Baviskar**, Professor, Environmental Studies and Sociology & Anthropology, Ashoka University on November 2
- Book Discussion on *Tigers Are Our Brothers: Anthropology of Wildlife Conservation in Northeast India* by **Prof Ambika Aiyadurai** on November 23
- International Conference on Mobility and Multilingualism in South and Southeast Asia: Impacts of global ecological change on local society organised by IIT Gandhinagar along with Cotton University (Guwahati), Navrachna University (Vadodara), Pragjyotish Centre for Cultural Research (Assam) and Central Institute for Indian Languages (Mysore), ICSSR (Delhi) and Social Science Research Council from December 27 to 29

ANNOUNCEMENTS



SWACHHATA PAKHWADA

IITGN observed ‘Swachhata Pakhwada’ from September 1 to 15, 2021, with several events and activities, including a Swachhata pledge, cleanest hostel competition, e-waste collection drive, drives to collect trash and litter while jogging, swachhata awareness in the neighbouring village and labour colonies, painting and essay writing competitions for children and students, among others. The IITGN Green Office coordinated the events.

AWARDS AND RECOGNITIONS

Professor Vimal Mishra has been selected for the prestigious 2021 American Geophysical Union (AGU) Devendra Lal Memorial Medal, which is awarded annually to early- or mid-career scientists for outstanding research in Earth or space sciences by scientists in developing countries.

The Indian Meteorological Department (IMD) has adopted the methodology developed by Prof Vimal Mishra and his team, to correct biases in the system for the prediction of potential rainfall, in real-time. IMD predicts rainfall by the computerized model-dependent Global Forecast System (GFS) which is subject to biases and results in inaccurate weather forecasts.

DATABASE OF ORGANISATIONS

KPCSD has launched a database of organisations located across India that work in the domain of sustainable development. Please see <https://csd.iitgn.ac.in/resources/> for the list.

We encourage you to use the database and to submit or update details of your organisation. Please scan the QR code here or click the link: <https://csd.iitgn.ac.in/4458-2/>

