

Environmental Science and Engineering Department (ESED)

Annual Report 2021-2022

1. Patents:

Sr. No.	Title of the Patent	Inventor	National / International	Status filed/ granted	Date of patent filed/granted
1.	Development of Efficient Waste-Derived Catalysts for the Degradation of Chlorinated Organics	Swati Singh and Anurag Garg	National	Granted	24/03/2022
2.	Rotary Drum Composting System for Household Wet Biodegradable Waste Stabilization	M. K. Manu, A. Garg, R. Kumar	National	Filed	22/05/2018
3.	Methods and systems for quantitative and qualitative analysis of phytoplankton	Mukherji Soumyo, Mandal, A.K., Punjabi, N.S. Dhawangale, A.R., Arali, S., Mukherji, Suparna	National	Filed	Filed on 2 nd September 2021
4.	Conductive membrane for Desalination, Water Recycling, and Near Zero Liquid Discharge Systems	Singh, S.P., Barbhuiya, N.H., and Misra, U.,	National	Filed	2 nd Dec 2021
5.	Nano and Micro-sized Titanium Suboxide from TiO ₂ powder and Doped Polymer Films for Energy and Environmental Application	Singh, S.P., Kumar, A	National	Filed	3 rd March 2022
6.	Method for Real Time Forecasting of Flood Risk Considering Hazard, Exposure and Vulnerability	Ghosh, S., Shrabani T. and Karmakar, S.	National	Tentatively accepted	1 st August 2019

2. Extension activities:

Abhishek Chakraborty

1. Member, NCAP (National Clean Air Programme) city level committee, Thane Municipal Corporation (TMC)

Anurag Garg

2. Serving as Associate Dean – III (IPS) at IIT Bombay since February 2022
3. November 2021 onwards - Maharashtra Pollution Control Board (MPCB) Chair Professor, IIT Bombay
4. Associate Faculty, Centre for Urban Science and Engineering (CUSE), IIT Bombay, Mumbai, INDIA since 2021
5. Visiting Professor, School of Water, Energy and Environment, Cranfield University, UK since 2019

Amritanshu Shriwastav

6. Reviewed the manuscripts submitted to multiple journals for publication
7. Reviewed the book proposals submitted to CRC Press
8. Reviewed the book chapters submitted to Springer for publication
9. Reviewed the project proposals submitted for funding to the following agencies: BIRAC, DBT, Government of India; BIRAC-SITARE- GYTI, DBT, Government of India; SERB, Government of India
10. Member of International Water Association (IWA)

Anil Kumar Dikshit

11. Judge in Sustainovation Event in Techno-Management Fest (Technex'21), IIT(BHU), 2 April 2021.
12. Judge for 5th International Civil Engineering Symposium (ICES2021) organised by Department of Civil Engineering, IIT Bombay, 24 April 2022.
13. External RDC Expert on Board of Examination of R/s Aayush Pandey, Department of Architecture & Planning, MANIT Bhopal, on August 9, 2021 (PhD Topic: Modelling for Municipal Solid Waste Management through Sound Material Cycle in Indian Context)
14. External PhD Examiner on Board of Examination of R/s Ms. Apeksha Vikalp Chavan, School of Environment and Sustainable Development, Central University of Gujarat, Gandhinagar, on November 24, 2021 (PhD Topic: Wastewater Treatment using Nano-based Composites and Bio-nanocomposite in Developed Reactors)
15. External PhD Examiner on Board of Examination of R/s Asheesh Mishra, Department of Environment Science & Engineering, IIT(ISM), Dhanbad, on December 14, 2021 (PhD Topic: A Comparative Study of Radon-222 and Gamma Level Variation in the Environment Around Uranium and Copper Industries of Singhbhum Region of Jharkhand)
16. External PhD Examiner on Board of Examination of R/s Mrs. Vandita Thantharate Shahu, Department of Mechanical Engineering, VNIT, Nagpur on January 5, 2022 (PhD Topic: Parametric Investigations on Novel Cylindrical and Helical Air Gap Membrane Desalination Systems: Analytical and Experimental Approach)
17. Chief Guest for World Ozone Day, B.K. Birla College, Kalyan, 16 September 2021.
18. Member, Faculty Selection Committee, Department of Civil Engineering, IIT Roorkee, October 29, 2021.
19. Member of Department Advisory Committee (DAC), Department of Civil Engineering, Indian Institute of Technology Jammu, Since November 2021.
20. Member of the Environmental Monitoring Committee (EMC), Mahul Trans Harbour Sealink Project. MMRDA, since 2019.
21. Reviewer for Applications submitted under Research and Innovation Support and Advancement (RISA), National Research Foundation (NRF), Africa.
22. Member of State Advisory Committee (SAC) constituted under Rule 9 of the Biomedical Waste (Management and Handling) Rules, 1998, Environment Department, Government of Maharashtra, since 2011.

23. Member, Technical Advisory Committee (TAC) on Fly Ash Utilization for MAHAGENCO Ash Management Services Ltd. (MAHAGAMS) since September 2021.

Munish Kumar Chandel

24. Expert Committee member set up by Hon'ble National Green Tribunal in the case Anand Uttarkar Vs The Municipal Corporation of the city of Pune & Ors. 2021.
25. Nodal Officer from IIT Bombay at Special Directorate of Chemical & Waste Management at CSIR-NEERI, Nagpur 2019-onward.
26. Expert member PMRF interviews for Civil Engineering, June 2019, December 2019, March 2022.
27. Advisory Council Member of Global Sanitation Center of Excellence (GSCOE), IIT Palakkad 2022

Subhankar Karmakar

28. Head, ESED, IIT Bombay since July 2021
29. Vice-chairperson, International Conference on Flood Management (ICFM) Ad Hoc Committee, 2020 - till date
30. Associate Faculty, IDP in Climate Studies (IDPCS); IIT Bombay, 2012 - till date
31. Associate Faculty, Centre for Urban Science and Engineering (CUSE), IIT Bombay, 2013 – till date
32. Contributing Author (Nov. 2020- Oct. 2023), Urban Climate Change and Research Network (UCCRN) < <https://uccrn.ei.columbia.edu/>>, of Third Assessment Report of Climate Change and Cities (ARC3.3), Earth Institute, Columbia University
33. Associate Editor, Frontiers in Water and Built Environment Journal, 2019 - till date
34. Managing Guest Editor, Special Issue (January 2021 - till date) - Water Security in Floodplains, Science of the Total Environment (IF 6.551), Elsevier
35. Managing Guest Editor, Special Issue: Lowering Risk by Increasing Resilience (August 2021 – till date) – with Prof. S P Simonovic and Prof. Z Cheng, Water, MDPI
36. Managing Guest Editor, Special Issue: Risk Forecasting of Extreme Weather (February 2021- till date), Sustainability, MDPI
37. Member of professional bodies (active): (i) International Water Association (IWA), (ii) American Geophysical Union (AGU), (iii) International Society of Ecotoxicology and Environmental Safety, Germany, (iv) Institute of Engineers, India
38. Member, Research Infrastructure Funding Committee (RIFC), IRCC, IIT Bombay (Jan. 2020 – till date)
39. Member, Undergraduate Academic Performance Evaluation Committee (UGAPEC), IIT Bombay (Jan. 2021 – till date)
40. Member, Post-graduate Committee at CUSE, IIT Bombay (Jan. 2019 – till date)
41. Member, Interdisciplinary Programmes Committee (IDPC) at IDP in Climate Studies, IIT Bombay (2012-2014, Jan. 2017 – till date)
42. Convener, DST Project Coordination Committee member at IDP in Climate Studies, IIT Bombay (2012 to 2017, March 2018 – till date)
43. External reviewer and examiner of Ph.D. thesis, IIT Kharagpur, IIT Guwahati, Jadavpur University.

44. Committee Member, DST, Engineering Science - Start-up Research Grant (SRG), Civil Engineering (2020 – till date)

Suparna Mukherji

45. Mukherji, S. “Health and Environmental Considerations in Greywater Management” presented in National Jal Jeevan Mission Training Programme on “Greywater Management” organized by ESED, IIT Bombay, November 15-16, 2021, and December 6-7, 2021.
46. Mukherji, S. “Engineered and Biological Treatment System for Greywater Treatment” presented in National Jal Jeevan Mission Training Programme on “Greywater Management” organized by ESED, IIT Bombay, November 15-16, 2021, and December 6-7, 2021.
47. Mukherji, S. “Advanced Water Treatment Processes for Removal of Specific Pollutants” presented in National Jal Jeevan Mission Training Programme on “Selection, Design, Construction and Operation and Maintenance of Water Treatment Plants” organized by ESED, IIT Bombay, October 21-22, 2021, and November 8-9, 2021.
48. Mukherji, S. “Greywater Treatment for Promoting Water Recycling and Reuse” Webinar on “Development of innovative technologies for waste recycling and sustainable management” Swachhata Pakhwada 2021 organized by ESED, IIT Bombay, 3rd September 2021.

V. S. Vamsi Botlaguduru

49. Short Term Course: NJJM In-house Training Course on Selection, Design, Construction and Operation & Maintenance of Water Treatment Plants.

3. Visitors to the Department (Invited by the Faculty, if any):

Tabish Nawaz

1. Host to Dr Tanmay Chaturvedi from Aalborg University, Denmark on 15th April 2022

4. Conferences/Symposia/Workshops/Seminars (Participated/Papers Presented):

• National

Amritanshu Shrivastav

1. Sethulekshmi, S., Krishnan, S., Karim, A.V., Kalbar, P., **Shrivastav, A.* (2022)**. Is visible light photocatalysis a suitable treatment option to curb microplastics pollution? First IITM International Conference on Circular Economy for Sustainable Water Management (SuWaM 2022). 23 - 25 March 2022. Organized by IIT Madras. (*Oral presentation / conference in virtual mode*).

Anil Kumar Dikshit

2. Presented paper on "Assessing Environmental Sustainability for Urban Infrastructure" in the International Conference on Innovative Trends in Hydrological and Environmental Systems (ITHES 2021), Organized by NIT Warangal, 30 April 2021.
3. Presented paper on "Assessing Environmental Sustainability for Industries" in the International Conference on Innovative Trends in Hydrological and Environmental Systems (ITHES 2021), Organized by NIT Warangal, 30 April 2021.

4. Delivered keynote on “Environmental Sustainability & Industries” in the Webinar on ‘Importance of Environmental Sustainability for Industries’ organized by IIT Bombay & SAGE, 24 April, 2021.
5. Delivered talk on “Ecosystem Restoration through Management of Water Environment” in UN Theme World Environment Day Webinar on Ecosystem Restoration, Golden Jubilee Celebration Series organized by SOCLEAN, D.C. Ruparel College, SAGE and IIT Bombay, 5 June, 2021.

Manoranjan Sahu

6. Chinmoy Mandal, Manoranjan Sahu, Photocatalytic disinfection kinetics and optimization of light source on inactivation of *Mycobacterium smegmatis* using nanoparticles, IITB & NTU symposium at IITB, 2021.

Subhankar Karmakar

7. Ghosh, M., Karmakar., S. and Ghosh, S. (2021) “Flood modelling for an urban Indian catchment: Challenges and way forward.” Virtual conference on disaster risk reduction, Civil Engineering for a Disaster Resilient Society, 15 March to 20 March 2021, Paper No. 198. (Oral Presentation)

Suparna Mukherji

8. Mukherji, S. 2021 “Application of Microbes and Nanomaterials for Promoting Wastewater Treatment and Reuse and Enhancing Water Quality” INAE Annual Convention, 16th-18th December 2021. Invited Presentation, *Online event*.
9. Mukherji, S., Jasmine, J. Chand, P. and Dutta, S. 2021 “Perspectives on Oily Tank Bottom Sludge and its Slurry Phase Treatment using Indigenous Microbes”, 4th Virtual Conference on “Waste Management Technology Trend and Developments” Organized by MattCorr, 19th and 20th August 2021. *Online Conference*.
10. Ghosh, P. and Mukherji, S. 2021 “Determination of Bacterial Uptake Mechanism of Carbazole and Identification of Degradation Pathway”, Virtual Research Symposium by Students (VRSS), IIT Bombay, Organized by IIT Bombay in Collaboration with NTU Singapore. 6th February 2021, Oral Presentation. *Online Conference*.

• International

Abhishek Chakraborty

1. Mandal D., Tripathi S., Chakraborty A.* (2022) "Indoor Air Quality in three different microenvironments of a residential academic institution" International Conference on Environmental Science and Engineering' (ICESE-2022), IIT Bombay, 20-22 January 2022, Mumbai.
2. Tripathi S., Mandal D., Chakraborty A.* (2022) "Secondary Pollutant levels in the residential region under the influence of traffic emissions" International Conference on Environmental Science and Engineering' (ICESE-2022), IIT Bombay, 20-22 January 2022, Mumbai.

Anurag Garg

3. B. Kanoo, A. Garg, 2021. Effect of diaper waste on composting of household wet biodegradable waste in decentralized system. In 14th International Conference on “Challenges in Environmental Science and Engineering” (CESE-2021) to be held during 6-7th November in online mode. (*Abstract accepted for oral presentation, full paper submitted in Environmental Science and Pollution Research*)

4. I. Khatri, A. Garg, 2021. Potash Recovery from Synthetic Solution and Biomethanated Distillery Effluent Using Selective Extraction Method. In 14th International Conference on “Challenges in Environmental Science and Engineering” (CESE-2021) to be held during 6-7th November in online mode. (*Abstract accepted for oral presentation and the full paper is submitted for publication in Environmental Technology & Innovation Journal*)
5. S. Bhowmick, Y. Shastri, A. Garg, 2021. Hydrothermal pretreatment of press mud and characterization of hydrochar and process wastewater. In 2nd International Conference on Chemical, Bio & Environmental Engineering (CHEMBIOEN-2021) organized by Dr. B. R. Ambedkar National Institute of Technology, Jalandhar during August 20-22, 2021 in online mode. (Oral presentation)
6. Merin S. James, A. Garg, 2021. Electrochemical Treatment of Sulphidic Spent Caustic Waste Stream Generated from Petroleum Refineries. In 2nd International Conference on Chemical, Bio & Environmental Engineering (CHEMBIOEN-2021) organized by Dr. B. R. Ambedkar National Institute of Technology, Jalandhar during August 20-22, 2021 in online mode. (Oral presentation; Paper published as Book Chapter in the book to be edited by the Conference organizers)
7. D. Gupta, S. M. Mahajani, A. Garg, 2021. Hydrothermal Carbonization of Household Wet Waste – Characterization of Hydrochar and Process Wastewater Stream. In 8th International Conference on “Sustainable Solid Waste Management” organized by National Technical University of Athens, Thessaloniki, Greece during 23-26 June 2021 in online mode. (*Oral presentation; The paper is submitted for special issue in Bioresource Technology Journal*)
8. Merin S. James, A. Garg, 2021. Oxidative Treatment of Sulphidic Spent Caustic Waste Stream. In International Conference on Reaction Engineering (ICRE-2021) organized by National Institute of Technology (NIT) Raipur during 7-8 May 2021 in online mode. (*Oral presentation*)

Amritanshu Shriwastav

9. Sethulekshmi, S., Krishnan, S., Karim, A.V., Kalbar, P., Shriwastav, A.* (2022). Is visible light photocatalysis a suitable treatment option to curb microplastics pollution? First IITM International Conference on Circular Economy for Sustainable Water Management (SuWaM 2022). 23-25 March 2022. Organized by IIT Madras. (*Oral presentation/conference in virtual mode*)
10. Karim, A.V., Krishnan, S., Shriwastav, A.* (2022). Sonophotocatalytic mineralization of antibiotics using N-TiO₂ catalyst: Process optimization, mechanism and degradation intermediates. 6th International Conference on Catalysis and Chemical Engineering (CCE-2022 virtual). 25-26 February 2022. Organized by USG United Scientific Group. (*Oral presentation/conference in virtual mode*)
11. Sethulekshmi, S., Kalbar, P., Shriwastav, A.* (2022). An estimate of Microplastics pollution from personal care products in India. International Conference on Environmental Science and Engineering (ICESE-2022). 20 - 22 January 2022. Organized by ESED, IIT Bombay. (*Oral presentation in virtual mode*)

Anil Kumar Dikshit

12. Participated in Virtual Global Environmental Sciences Summit. Organized by PerkinElmer, June 4, 2021.
13. Kumar, Rahul and Dikshit, Anil Kumar, “Water and Disasters – A Case Study of India” presented in 1st International Online Conference on Sustainable Development in Civil and Electrical Engineering (SDCEE-2021), Dec. 17-19, 2021 at NIT Kurukshetra.

14. Soni, Harshvardhan and Dikshit, Anil Kumar, "Various Decentralized Wastewater Treatment Technologies and Systems" presented in 1st International Online Conference on Sustainable Development in Civil and Electrical Engineering (SDCEE-2021), Dec. 17-19, 2021 at NIT Kurukshetra.
15. Aryan, Yash and Dikshit, Anil Kumar, "Environmental Performance Assessment of Electric and Gasoline Two-Wheelers Using LCA" presented in 1st International Online Conference on Sustainable Development in Civil and Electrical Engineering (SDCEE-2021), Dec. 17-19, 2021 at NIT Kurukshetra.
16. Singh, Deval and Dikshit, Anil Kumar, "Developing A Landfill Bio-cover to Reduce Emission of Methane" presented in 1st International Online Conference on Sustainable Development in Civil and Electrical Engineering (SDCEE-2021), Dec. 17-19, 2021 at NIT Kurukshetra.

Harish C. Phuleria

17. Raparathi N, Phuleria HC. 2021. Optical properties of light-absorbing carbonaceous aerosols from on-road vehicles, Poster presentation at 24th *ETH-Conference on Combustion Generated Nanoparticles (ETC-CGN)*, Virtual meeting, June 22-24, 2021.
18. Patra A, Phuleria HC. 2021. Is metro railway a commute friendly option? An environmental health perspective, Poster presentation at 33rd *Annual Meeting of the International Society of Environmental Epidemiology (ISEE)*, Virtual meeting, August 23-26, 2021.
19. Vijay P, Anand A, Jahan P, Schikowski T, Phuleria HC. 2021. Spatial variation of outdoor and indoor NO₂ in metropolitan cities in India, Poster presentation at 33rd *Annual Meeting of the International Society of Environmental Epidemiology (ISEE)*, Virtual meeting, August 23-26, 2021.
20. Raparathi N, Dubey S, Gupta K, Phuleria HC. 2021. Oxidative potential of PM_{2.5} from on-road vehicles from the road-tunnel measurements, Platform presentation at *European Aerosol Conference (EAC)*, Virtual meeting, August 30 – September 2, 2021.
21. Dubey S, Vijay P, Yadav S, Phuleria HC. 2021. Examining oxidative potential of residential outdoor PM_{2.5} in metropolitan cities, Poster presentation at 31st *Annual Meeting of the International Society of Exposure Science (ISES)*, Virtual meeting, August 30 – September 2, 2021.
22. Yadav S, Dubey S, Kapoor TS, Duhan S, Laura JS, Venkataraman C, Phuleria HC. 2021. Examining the light-absorbing properties of water-soluble and insoluble organic aerosols at a regional background site in India, Poster presentation at 31st *Annual Meeting of the International Society of Exposure Science (ISES)*, Virtual meeting, August 30 – September 2, 2021.
23. Jyotsana J, Gupta AK, Navinya C, Phuleria HC. 2021. Estimation of PM_{2.5} Exfiltration factor from biomass cooking, Platform presentation at 39th *Annual Conference of American Association for Aerosol Research (AAAR)*, Virtual meeting, October 18-22, 2021.
24. Vijay P, Dubey S, Phuleria HC. 2021. Intra and inter-urban variability in chemical characteristics of fine particulate matter in metropolitan cities in India, Poster presentation at 39th *Annual Conference of American Association for Aerosol Research (AAAR)*, Virtual meeting, October 18-22, 2021.
25. Navinya C, Phuleria HC, Gupta AK, Lokhande P, Habib G, Venkataraman C, Chatterjee A, Abisheg D, Goel A, Jehangir A, Liang Y, Mandal TK, Nagendra S, Qureshi A, Sunder Raman R, Saikia BK, Sinha B. 2021. Fine particulate matter and black carbon emissions from Non-Cooking Residential sector activities over rural India, Poster presentation at 39th *Annual Conference of American Association for Aerosol Research (AAAR)*, Virtual meeting, October 18-22, 2021.

26. Debbarma S, Raparathi N, Venkataraman C, Phuleria HC. 2021. Developing carbonaceous aerosol emission profiles from measurements at urban and inter-city road tunnels in India. Poster presentation at *American Geophysical Union (AGU) Fall Meeting*, Virtual meeting, Dec 13-17, 2021.

Manoranjan Sahu

27. Manoranjan Sahu, Calibration of low-cost sensor by application of machine learning (ml) algorithms for real time air pollution assessment, international modern scientific research congress june 4-5, 2021, Turkey.
28. Vikas kumar, Manoranjan Sahu, 2021, Evaluation of nine machine learning regression algorithms for calibration of low-cost PM_{2.5} sensor, International Aerosol Modeling Algorithms Conference 2021, dec 7-10, USA.
29. M. Sahu, 2022, Key Note talk on Application of Machine Learning in Air Pollution Monitoring and Modeling, International conference in Environmental Science and Engineering (ICESE), 20th Jan 2022.
30. Aiswarya A Kumar, Vasudev Malyan, Manoranjan Sahu, 2021, Comparative analysis of different indoor particle control technologies, 6th Indian International Conference on Air Quality Management (IICAQM 2021) Measurement, Modelling, Health Risk and Public Policy, 16 dec 2021, India.
31. Saptarshi Ghosh, Manoranjan Sahu, 2021, Phthalate Esters Removal from Aqueous systems Using Semiconductor Photocatalysis, International conference in Environmental Science and Engineering (ICESE), 20-22 Jan, 2022.
32. Vikas Kumar, Manoranjan Sahu, 2022, Application of Machine learning algorithm for calibration of Low cost sensor, Air Sensors International Conference, May 2022
33. Chinmoy Mandal, Manoranjan Sahu, International conference in Environmental Science and Engineering (ICESE), 20-22 Jan, 2022.

Munish Kumar Chandel

34. Rajhans Negi and Munish K. Chandel (2022), "Analysis of Embodied Energy and GHG Emissions from Wastewater Reuse Strategies: A Case Study of Urban Water System in the Indian Himalayan Region" 17th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES). 6-10 November 2022, Paphos, Cyprus.
35. Ayush Singh and Munish K. Chandel (2022), "Study of degradation status in dumped municipal solid waste using biological and spectroscopy analysis" (Accepted for Publication). CORFU 2022 9th International Conference on Sustainable Solid Waste Management. 15-18 June 2022, Corfu, Greece.
36. Rajhans Negi and Munish K. Chandel (2022), "Effect of Water Quality on Energy Use of a Large Conventional Water Treatment Plant", First International Conference on Circular Economy for Sustainable Water Management, March 23-25, 2022.
37. Ayush Singh and Munish K. Chandel (2022), "Legacy waste as compost: Impact of heavy metals on Napier grass growth." International Conference on Environmental Science and Engineering' (ICESE-2022), IIT Bombay, 20-22 January 2022, Mumbai.
38. Rajhans Negi and Munish K. Chandel (2022), "Quantifying Energy Use and Wastewater Quality Index in a Wastewater Treatment and Reuse System." International Conference on Environmental Science and Engineering' (ICESE-2022), IIT Bombay, 20-22 January 2022, Mumbai.

Srinidhi Balasubramanian

39. Balasubramanian, S (2022), "The food we eat, the air we breathe: Air pollution health impacts from the global food system". International Conference on Environmental Science and Engineering' (ICESE-2022), IIT Bombay, 20-22 January 2022, Mumbai. Online mode.

Subhankar Karmakar

40. Shilin, A., Sudharsan, N., Mondal, A., Kalbar, P., and Karmakar., S. (2022). "An insight to heatwave hazard mapping over the Indian subcontinent" European Geophysical Union General Assembly 23 May to 27 May 2022, Issue No. EGU21-11891. (Oral Presentation).
41. Sadhwani, K., Eldho, T.I., and Karmakar., S. (2022)" Projected Climate Change Impact Assessment on Drought Characteristics Over a Humid Tropical Region in India" European Geophysical Union General Assembly 23 May to 27 May 2022, Issue No. EGU22-9070-11891. (Oral Presentation).
42. Sudharsan, N., Hari, V., and Karmakar., S. (2021). "Dynamic Process Surpasses the Thermodynamic Process in Driving Precipitation Extremes over India". In AGU Fall Meeting 2021. New Orleans, LA & Online (Poster Presentation).
43. Ghosh M., Karmakar., S., Ghosh, S. (2021). "Development of a rationalized hydrometeorological network for an urban catchment under resource-constrained scenario. AGU Fall Meeting 2021, New Orleans, LA & Online (Poster Presentation) (Received AGU Student Travel Grant)
44. Mondal, K., and Karmakar., S. (2021). "A Framework for Global Sensitivity Analysis in a Complex 1D-2D Coupled Hydrodynamic Model: Highlighting its Importance on Flood Mapping Over Large Data-Scarce Regions". In AGU Fall Meeting 2021. New Orleans, LA & Online (Poster Presentation).
45. Parmar, J., and Karmakar., S. (2021). "Framework to Understand Past, Present, and Future Flood Generation in India". In AGU Fall Meeting 2021. New Orleans, LA & Online (Poster Presentation).
46. Ghosh, S., Tripathy, S., Bhatia, U., and Karmakar., S. (2021). "Flood Forecasting and Evacuation based on Weather Forecasts". In AGU Fall Meeting 2021. New Orleans, LA & Online (Poster Presentation).
47. Nair, A.S., Soman, M.K., Patidhar, G., Indu, J., and Karmakar., S. (2021). "Assessing the Potential of the Surface Water and Ocean Topography (SWOT) mission measurements for monitoring hydrologic parameters in the Mahanadi River Basin". In AGU Fall Meeting 2021. New Orleans, LA & Online (Poster Presentation).
48. Ghosh M., Paul, S., Karmakar., S. and Ghosh, S. (2021) "Near-real-time flood forecasting for an urban coastal catchment: An approach in combination of numerical weather and 3-way coupled hydrodynamic flood modelling" European Geophysical Union General Assembly 19 April to 30 April 2021, Issue No. EGU21-12834. (Oral Presentation).

Suparna Mukherji

49. Garg, N. and Mukherji, S. 2021 "Water Washing as Pre-treatment for Enhancing the Bioleaching of Metals from BOF Slag" Nature Conference on Waste Management and Valorisation for a Sustainable Future, Seoul, South Korea, 26th – 28th October 2021. *Poster Presentation*.
50. Ghosh, P. and Mukherji, S. 2021 "Biomonitoring of toxicity of some PAHs and heterocyclic PAHs and their degradation by-products using *Vibrio fischeri* NRRL B-11177", Christ Engineering Congress 2021 (CEC 2021), International Conference Organized by Christ College of Engineering, Kerala, India, 13th to 15th July 2021.

51. Garg, N. and Mukherji, S. 2021 “Recovery of Heavy Metals from Indian LD Slag Using Acidophilic and Heterotrophic Bacteria: A Comparative Study” 8th International Conference on Sustainable Solid Waste Management, Organized by: National Technical University of Athens, Global WtERT Council (GWC) and World Biogas Association, Thessaloniki, Greece, 23rd – 26th June 2021.
52. Mukherji, S., Chand, P. and Datta S. 2021 “Slurry phase Biodegradation of Aged Oily Sludge from a Refinery by Indigenous Bacteria and Insights Gained from GCxGC TOF MS Analysis” International Conference on Biotechnology for Sustainable Agriculture, Environment and Health (BSAEH-2021), Jaipur, India, 4th-8th April 2021. Invited Oral Presentation.
53. Garg, N. and Mukherji, S. 2021 “Mechanism of Bioleaching of Metals from Indian BOF Slag Using Acidophilic Bacteria” International Conference on Biotechnology for Sustainable Agriculture, Environment and Health (BSAEH-2021), Jaipur, India, 4th-8th April 2021. Poster Presentation.
54. Pisharody, L., Suresh, S. and Mukherji, S. 2021 “Effect of Anions and Bacteria on Adsorption of Viruses on DEAE Cellulose and Functionalized Rice Husk Ash (FaRHA) Evaluated using Bacteriophage MS2 and SUSP2. International Conference on Biotechnology for Sustainable Agriculture, Environment and Health (BSAEH-2021), Jaipur, India, 4th-8th April 2021. Poster Presentation.
55. Pisharody, L., Suresh, S. and Mukherji, S. 2021 “Monitoring of Rotavirus A, SUSP2 Coliphage and Coliforms in two Urban Lakes in India” Early Career Scientist (ECS) Research Symposium, organized by Society for Applied Microbiology (SfaM), Online Conference, 22nd -26th March 2021. Oral Presentation.
56. Garg, N. and Mukherji, S. 2021 “Enhancing the Leaching of Metals from Slag by Using Sequential Chemical Leaching and Acidophilic Bioleaching” Early Career Scientist (ECS) Research Symposium, organized by Society for Applied Microbiology (SfaM), Online Conference, 22nd -26th March 2021. Oral Presentation.
57. Ghosh, P. and Mukherji, S. 2021 “Degradation of Various Aromatics and Heterocyclics in Petroleum Refinery Wastewater by Pseudomonas aeruginosa RS1” International Conference on “Emerging Technologies in Water, Waste Water Treatment and Solid Waste Management”, organized by Gogte Institute of Technology at Belgaum, Karnataka, India, 18th – 20th March, 2021. Poster Presentation
58. Mohapatra, S., Acharya, K., Leng, Y.F., Mroziak, W., Padhye, L.P., Werner, D., and Mukherji 2021 “Enzymatic Degradation of Mixture of Pharmaceuticals” SETAC 10th Young Environmental Scientist Meeting, 22nd-26th February 2021. Oral Presentation.
59. Ghosh, P. and Mukherji, S. 2021 “Determination of Bacterial Growth and Substrate Degradation in Mixtures of Carbazole, Fluorene and Dibenzothiophene and Elucidating Substrate Interactions”, SETAC 10th Young Environmental Scientist Meeting, 22nd-26th February 2021. Poster Presentation.
60. Menon, N. G., Tatiparti S.S.V., and Mukherji, S. 2021 “Photocatalytic Removal of Carbamazepine and Diclofenac using a Visible Light Active TiO₂-ZnO Nanocomposite: Effect of Anions, Degradation Pathway and Photocatalytic Mechanism” International Conference on Nanoscience and Nanotechnology (ICONN 2021), Organized by Department of Physics and Nanotechnology, SRMIST in association with Shizuoka University, Japan and NCTU-Taiwan, GNS-New Zealand, University of Rome Tor Vergata Italy ACCMS, ICS India, TIFR India, RMIT University, Australia, Indian Physics Association, Materials Research Society of India and Springer Nature, Virtual Conference, Feb 1-3, 2021. Oral Presentation.

61. Kumar, R. and Mukherji, S. 2021 “Assessment of Photocatalytic Efficiency of Graphene oxide-TiO₂ Nanocomposite for Removal of Binary Mixtures of Organophosphorus Pesticides” International Conference on Nanoscience and Nanotechnology (ICONN 2021), Organized by Department of Physics and Nanotechnology, SRMIST in association with Shizuoka University, Japan and NCTU-Taiwan, GNS-New Zealand, University of Rome Tor Vergata Italy ACCMS, ICS India, TIFR India, RMIT University, Australia, Indian Physics Association, Materials Research Society of India and Springer Nature, Virtual Conference, Feb 1-3, 2021. Poster Presentation.
62. Thian, X.Y., Mukherji, S., Mukherji, S. 2021 “Photocatalytic Nitrate Reduction over Ag Modified ZnO” International Conference on Nanoscience and Nanotechnology (ICONN 2021), Organized by Department of Physics and Nanotechnology, SRMIST in association with Shizuoka University, Japan and NCTU-Taiwan, GNS-New Zealand, University of Rome Tor Vergata Italy ACCMS, ICS India, TIFR India, RMIT University, Australia, Indian Physics Association, Materials Research Society of India and Springer Nature, Virtual Conference, Feb 1-3, 2021. Oral Presentation.

Swatantra P. Singh

63. Jashrapuria, K. & Singh, S.P. (2022). Effect of textured surface on bacterial cell attachment growth and morphology. *Sustainable Technologies in Water Treatment and Desalination (STWTD – 2022)*, 28-29 January 2022 at NIT Calicut.
64. Kanwar B., Koli M., & Singh, S. P. (2022). Study of amoxicillin removal by electrochemical oxidation process. *2nd International online conference on Sustainable Technologies for Water Treatment and Desalination (STWTD – 2022)*, 28 -29 January 2022 at NIT Calicut
65. Dixit N., & Singh S.P. (2022), Metal-Doped Laser-Induced Graphene Nanocomposites for Water Disinfection Applications. *International Conference on Environmental Science and Engineering, (ICESE- 2022)*, 20-22 January 2022 at IIT Bombay.
66. Kanwar B., Kumar P., & Singh, S. P. (2022). Study of ciprofloxacin removal by electro-coagulation process. *International conference on Environmental Science and Engineering*, 20 -22 January 2022 at IIT Bombay
67. Dixit N., Nair A.M., & Singh, S.P., (2021). Antibacterial surface-modified Polyethersulfone (PES) Membrane-based Laser-Induced Graphene (LIG). *Sustainable Energy and Environmental Challenges (VI SEEC-2021)*, 27- 29 December at Lucknow
68. Ranjan R., & Singh, S. P. (2022). Enhancing flux performance of thin film composite membrane by substrate layer modification using Graphene Oxide. *Sustainable Technologies for Water Treatment and Desalination (STWTD – 2022)*.
69. Kumar, A., Singh, S.P. (2022). Doped laser-Induced Graphene Electrodes for Contaminant Removal. *Sustainable Technologies in Water Treatment and Desalination (STWTD – 2022)*, 28-29 January 2022 at NIT Calicut.
70. Jashrapuria, K. & Singh, S.P. (2022). Laser induced graphene - an effective anti-biofouling strategy. *International Conference on Environmental Science and Engineering (ICESE-2022)*, 20-22 January 2022 at IIT Bombay.
71. Kumar, A. & Singh, S.P. (2022). Heteroatom Doped Laser-Induced Graphene Electrodes for Organic Dye Removal. *International Conference on Environmental Science and Engineering (ICESE-2022)*, 20-22 January 2022 at IIT Bombay.
72. Chauhan N. & Singh. S. P. (2022). Ceramic Membranes for Wastewater Treatment and Desalination.

Sustainable technologies for water treatment and desalination (STWTD -2022), 28th -29th January 2022 at NIT Calicut.

73. Sharma, R. & Singh, S.P. (2022). Biomimetic membranes - A novel approach for Desalination and Emerging Contaminants (ECs) removal. *Sustainable Technologies for Water Treatment and Desalination (STWTD – 2022), at NIT Calicut.*
74. C.L Aiswarya & Singh, S.P. (2022). Current status of the brine treatment technologies. *International Conference on Environmental Science and Engineering (ICESE-2022), 20-22 January 2022 at IIT Bombay*
75. C.L Aiswarya & Singh, S.P. (2022). A review on the environmental impacts of reverse osmosis (RO) desalination technology. *Sustainable Technologies for Water Treatment and Desalination (STWTD – 2022), 28th -29th January 2022 at NIT Calicut*
76. Kumar, P., Nawaz, T., & Singh, S. P (2022). Application of Electrocoagulation for drill site wastewater treatment. *Sustainable Technologies for Water Treatment and Desalination (STWTD – 2022), 28 -29 January 2022, NIT Calicut.*
77. Ranjan R., & Singh S.P. (2022). Enhancing desalination performance of thin film composite membrane by substrate layer modification using Graphene Oxide. *International conference on Environmental Science and Engineering, (ICESE-2022).*
78. Wanjari V. P., Duttagupta, S.P. & Singh, S.P. (2022). Graphene-based sensors for Heavy Metal Ions detection – An electrochemical sensing approach. *Sustainable Technologies for Water Treatment and Desalination (STWTD – 2022), 28-29th January 2022 at NIT Calicut: Accepted for Oral Presentation*
79. Wanjari V. P., Duttagupta, S.P. & Singh, S.P. (2022). Electrochemical sensor for detection of 4-nitrophenol using graphene-based nanocomposites. *International Conference on Environmental Science and Engineering (ICESE – 2022), 20-22nd January 2022 at IIT Bombay: Poster Presentation.*
80. Nair, A.M., Kumar, A. & Singh, S.P. (2022). Laser-Induced Graphene based Surfaces for Inactivation of Viruses. *Sustainable Technologies in Water Treatment and Desalination (STWTD – 2022), 28-29 January 2022 at NIT Calicut.*
81. Nair, A.M., Kumar, A. & Singh, S.P. (2022). Electrochemical Inactivation of Viruses using Metal Doped Nanomaterials. *International Conference on Environmental Science and Engineering (ICESE-2022), 20-22 January 2022 at IIT Bombay.*
82. Koli M., Kanwar B., Singh S.P. (2022) Electrochemical treatment for Methylene Blue removal using graphite electrodes: Effect of voltage. *International Conference on Environmental Science and Engineering (Online Mode), 20-22 January 2022 at IIT Bombay.*
83. Barbhuiya, N.H., Misra, U. & Singh, S. P. (2022). Laser-induced Graphene-based Joule Heaters for Water Evaporation. *International Conference on Environmental Science and Engineering (ICESE 2022), IIT Bombay.*
84. Nair, A.M., Kumar, A. & Singh, S.P. (2021). Electrochemical Disinfection Performance of Metal Doped Nanomaterials for Virus Inactivation. *International Conference on Sustainable Energy and Environmental Challenges (VI SEEC), 27-29 December 2021.*
85. Wanjari V. P., Duttagupta, S.P. & Singh, S.P. (2021). Biosensors for the Environmental Applications. *VIth SEEC – Sustainable Energy and Environmental Challenges - International Society for Energy Environment and Sustainability, 27-29th December 2021 (Online)*

86. Koli M., Singh S.P. (2021) Symmetric Membranes: A new approach in membrane technology. 6th *International Conference on Sustainable Energy and Environmental Challenges (Hybrid Mode)*, 27-29 December 2021.
87. Jashrapuria, K. & Singh, S.P. (2021). Graphene-based nanomaterials: a promising tool in biofouling control. *International Conference on Sustainable Energy and Environmental Challenges (VI SEEC)*, 27-29 December 2021.
88. Misra U., Barbhuiya N.H., Singh S.P. (2021) New generation LIG-PES based composite membranes for energy-efficient water treatment. VIth *International Conference on "Sustainable Energy and Environmental Challenges (VISEEC-2021)*, 27-29 December 2021 at: Lucknow.
89. Barbhuiya, N.H. & Singh, S. P. (2021). Laser-Induced Graphene-Based Electroconductive Filters and Composites for the Removal of Pharmaceutical Compounds. *VI International Conference on Sustainable Energy and Environmental Challenges (VI SEEC)*, *International Society for Energy, Environment and Sustainability (ISEES)*.
90. Reddy, S & Singh, S.P. (2021) Enhancing properties of poly (vinylidene fluoride) membranes for water treatment applications via non-solvent induced phase inversion method. *International Conference on Sustainable Energy and Environmental Challenges (ISEES-2021)*, Lucknow, India.
91. Barbhuiya, N.H., Misra, U. & Singh, S. P. (2021). Laser-Induced Graphene Composite Membranes for the Removal of Emerging Contaminants, *Membrane Desalination 2021* 14 -17 Nov 2021 Organised by Shanghai Advanced Research Institute, ShanghaiTech University and University of Technology Sydney.

Tabish Nawaz

92. Tabish Nawaz, Sukalyan Sengupta (presenter), 2022, "Silver recovery and removal from laundry wash water", ACS Spring 2022, 20-24 March 2022, San Diego, USA
93. Tabish Nawaz, 2022, "Resource recovery opportunities from food processing wastewater," A joint symposium on sustainable developments in local land and food systems: socioeconomic, technological and environmental aspects organized by ESED, IIT Bombay and Faculty of Land and Food Systems, UBC Canada, 22 March 2022, Online
94. M. A. N. Shaikh (presenter), Tabish Nawaz, 2022, "PFAS removal from aqueous media by using Naturally derived sorbents", Sustainable Technologies in Water Treatment and Desalination (STWTD-2022), 28-29 January 2022, Online
95. Darakhshan Nayyar (presenter), Tabish Nawaz, 2022, "PFAS Removal Using Ion Exchange Resins", Sustainable Technologies in Water Treatment and Desalination (STWTD-2022), 28-29 January 2022, Online
96. Saumya Agrawal (presenter), Tabish Nawaz, 2022, "Mathematical Modeling of Electrocoagulation system for Produced Water", Sustainable Technologies in Water Treatment and Desalination (STWTD-2022), 28-29 January 2022, Online (poster presentation)
97. Pramod Kumar (presenter), Tabish Nawaz, Swatantra Pratap Singh, 2022, "Application of Electrocoagulation for drill site wastewater treatment", Sustainable Technologies in Water Treatment and Desalination (STWTD-2022), 28-29 January 2022, Online (poster presentation)
98. Rishabh Gupta (presenter), Tabish Nawaz, 2022, "Resource Recovery from Seawater Reverse Osmosis (SWRO) Concentrate", Sustainable Technologies in Water Treatment and Desalination (STWTD-2022), 28-29 January 2022, Online (poster presentation)

5. Conferences/Symposia/Workshops/Seminars (Coordinated/Chaired by Faculty):

Abhishek Chakraborty

1. International conference on Environmental Science and Engineering (ICESE 2022) 20-22th Jan 2022, Co-Organiser

Anurag Garg

2. Main Coordinator of a half-day session on “Sustainable Wastewater Management in Oil and Gas Sector” which was a part of Conclave organized by Centre of Excellence in Oil, Gas and Energy, IIT Bombay on 15th December 2021. (Co-Coordinator: Prof. Sanjay Mahajani, ChED, IIT Bombay; Prof. Santanu Bandyopadhyay, DESE, IIT Bombay; Dr. Jayant Joshi, EIL; Dr. Manoj Upreti, IOCL)

Amritanshu Shrivastav

3. Organized a Faculty Development Workshop on “Application of Nanotechnology in Water and Wastewater Treatment” for faculty of local colleges in online mode during 13 - 14 January 2022. Online.
4. Organized a Faculty Development Workshop on “An Overview of Recent Advances in Water and Wastewater Treatment Technologies” for faculty of local colleges. 10 - 11 January 2022. Online.

Anil Kumar Dikshit

5. Organized UN Theme World Environment Day Webinar on Ecosystem Restoration, Golden Jubilee Celebration Series organized jointly by SOCLEAN, D.C. Ruparel College, SAGE and IIT Bombay, June 5, 2021.
6. Organized RIN-Online Symposium on Energy Technology sponsored by Russian Indian Network, October 20, 2021.

Munish Kumar Chandel

7. Convener of Webinar on the Development of innovative technologies for waste recycling and sustainable management under Swachhata Pakhwada 2021. Organised by ESED, IIT Bombay, 03 September 2021.
8. Session Chair: International Conference on Environmental Science and Engineering (ICESE-2022), IIT Bombay, 20-22 January 2022.
9. Session Chair: International Conference on Sustainable Materials and Practices for Built Environment (SMPBE-2021). November 25-26, 2021. Manipal University Jaipur.

Subhankar Karmakar

10. Organized webinar on "Scope for Technology Development & Entrepreneurship in Climate Studies" on 17 March 2021, Interdisciplinary Programme in Climate Studies (IDPCS), IIT Bombay.
11. Organized webinar on "Climate Resilient Engineering Design" on 24 March 2021, Interdisciplinary Programme in Climate Studies (IDPCS), IIT Bombay.
12. Organized e-School on Climate Science & Policy, 16-27 August 2021, Interdisciplinary Programme in Climate Studies (IDPCS), IIT Bombay.

13. Organized National Jal Jeevan Mission (NJJM) Level-1 course titled "Climate change risk assessment and water security challenges," conducted during 23-24 February 2022 (Session-1)
14. Organized National Jal Jeevan Mission (NJJM) Level-1 course titled "Climate change risk assessment and water security challenges," conducted during 9-10 March 2022 (Session-2)
15. Session Chair: Technical session TS5 on Climate Change Impact on Water Resources, 26th International Conference on Hydraulics, Water Resources and Coastal Engineering HYDRO 2021 INTERNATIONAL at SVNIT Surat, Gujarat, India December 23-25, 2021.
16. Session Chair: Webinar-6 of ICFM on “Real-time Urban Flood Forecasting: Current Status and Future Challenges,” 14 June 2021, <https://www.icfm.world/Webinars/webinars-no-6.html>.

Swatantra P. Singh

17. International conference on Environmental Science and Engineering (ICESE 2022) 20-22th Jan 2022, Co-Organiser
18. Faculty Development Workshop on “Application of Nanotechnology in Water and Wastewater Treatment” 13-14 Jan 2022. Organizer
19. Faculty Development Workshop on An Overview of Recent Advances in Water and Wastewater Treatment Technologies 10-11 Jan 2022. Co-organizer
20. Webinar on the development of innovative technologies for waste recycling and sustainable management under Swachhata Pakhwada 2021 03 September. 2021, Co-Organizer
21. NJJM Training Course on the Greywater Management, 15-16 Nov 2021 and 6-7 Dec 2021 Co-Organiser
22. NJJM Training Course on the Greywater Management, 6-7 Dec 2021 Co-Organizer
23. NJJM Training Course on the Greywater Management, 24-25 Feb 2022 Co-Organizer

Tabish Nawaz

24. A Symposium Emerging Contaminants Fate, transport Remediation Aspects Organized to celebrate Azadi ka Amrit Mahotsav, online on 21-22 February 2022
25. A symposium on Sustainable Developments in Local Land and Food Systems: Socioeconomic, Technological, and Environmental Aspects, A symposium as part of Shastri Indo-Canada Lecture Series Grant funded by Shastri Indo-Canadian Institute on 22nd March 2022. Online.

V. S. Vamsi Botlaguduru

26. Conference Co-Chair in Two-day International Conference on Advances in Civil Engineering (ICACE-2021) at K L Deemed to be University.
27. Coordinated an In-house Training Course on Selection, Design, Construction and Operation & Maintenance of Water Treatment for the National Jal Jeevan Mission (2021-2022).
28. Coordinated a Symposium on Emerging Contaminants: Fate, Transport & Remediation Aspects, as part of Azadi ka Amrit Mahotsav.

6. Invited Lectures:

- **National**

Anurag Garg

1. A. Garg, 2022. A Guest lecture on “Importance of Swachata, Sustainability, Clean & green Environment” for the Inaugural function of Swachata Pakhwada celebrated on 16th February 2022 by Directorate of Construction Services & Estate management, Department of Atomic Energy, Mumbai.
2. A. Garg, 2022. A lecture on “Urban Municipal Solid Waste Management Opportunities and Challenges” in Continuing Education Programme on “Sustainable Urban Systems” organized on 8th January 2022 by Centre for Urban Science and Engineering, IIT Bombay.
3. A. Garg, 2021. Participated as Panelist on “Making India’s Cities Zero Waste: Tackling Municipal Solid Waste Management” at the fifth edition of ISC – FICCI Sanitation Awards and Conclave organized on 10-11th November 2021 by Indian Sanitation Coalition, at Federation of Indian Chambers of Commerce and Industries (FICCI). (Online mode)
4. A. Garg, 2021. An invited talk on “Solid Waste Management: Reuse and Recycling Options” in One day National Seminar on Sustainability Day “Act Responsible, Think Sustainable” organized on 27th October 2021 by Indian Institute of Management Sirmaur. (Online mode)
5. A. Garg, 2021. A Plenary talk on "Wet Oxidation: An Efficient Pretreatment Alternative for High Strength Industrial Effluents" in second International Workshop on Chemical, Bio & Environmental Engineering (CHEMBIOEN-2021) organized during August 20-22, 2021 by Department of Chemical Engineering, Dr BR Ambedkar National Institute of Technology, Jalandhar (Punjab), India. (Online mode)
6. A. Garg, 2021. An invited lecture on “Hydrothermal Pretreatment: A Potential Way to Improve Resource Recovery from Wastewater and Sludge” in an AICTE sponsored ATAL FDP on ‘Advances in Pollution Control Technologies and Sustainable Development’ organized during 2-6 August, 2021 by the Department of Chemical Engineering, MNIT, Jaipur. (Online mode)

Amritanshu Shriwastav

7. Delivered a lecture on “Introduction to Greywater Management” during Level-2 Training Programme on "Greywater Management" for government officials of National Jal Jeevan Mission in online mode on 24th February 2022
8. Delivered a lecture on “Application of Nanocatalysts for Advanced Oxidation Processes in Water and Wastewater Treatment” in the Faculty Development Workshop on “Application of Nanotechnology in Water and Wastewater Treatment” for the faculty of local colleges organized at IIT Bombay in online mode on 14th January 2022
9. Delivered a lecture on “Advanced Oxidation Processes for Removal of Recalcitrant Organic Compounds” in the Faculty Development Workshop on “An Overview of Recent Advances in Water and Wastewater Treatment Technologies” for the faculty of local colleges organized at IIT Bombay in online mode on 10th January 2022
10. Delivered a lecture on “Introduction to Greywater Management” during Level-2 Training Programme on "Greywater Management" for government officials of National Jal Jeevan Mission in online mode on 6th December 2021
11. Delivered a lecture on “Introduction to Greywater Management” during Level-2 Training Programme on "Greywater Management" for government officials of National Jal Jeevan Mission in online mode on 15th November 2021

Anil Kumar Dikshit

12. Presented invited talk on “Products and Services on Sanitation and Waste Management Developed by IIT Bombay” in ATAL FDP on ‘Advances in Waste Treatment Technologies’, Government Engineering College, Modasa, 23 August 2021.
13. Presented invited talk on “Innovative Technologies for the Waste Management” in Webinar on Development of Innovative Technologies for Waste Recycling and Sustainable Management, uber Swachhata Pakhwada 2021, IIT Bombay, 3 September 2021.
14. Panelist in Panel Discussion 2 on Challenges & Way Forward in SWM, National Workshop on Solid Waste Management, IIT Delhi, July 30-31, 2021.
15. Delivered keynote address on “Air Pollution Control Technologies, World Ozone Day, B.K. Birla College, Kalyan, 16 September 2021.
16. Delivered invited talk on “Issues & challenges in Reducing carbon footprint” in AICTE (ATAL) Sponsored Faculty Development Program on Carbon Footprint Reduction: Issues and Challenges, Goa College of Engineering, 8 November 2021.
17. Delivered talk on “Designing a Household Composter for urban households”, in One Week Course on ‘Composting Technologies for Municipal Solid Waste Management’, Organized by Department of Civil Engineering, N.I.T. Waranal, 5 January, 2021
18. Delivered Invited Talk Titled “Environmental Systems Modelling and Optimization” in the FDP on "Creating Wealth from Waste (CWW-2021), Organized by Department of Metallurgical and Materials Engineering, N.I.T. Durgapur along with ATAL Academy, Government of India, 18-22 January 2021.
19. Delivered talk on “R&D Work by IIT Bombay on SDG-6: Clean Water & Sanitation” in the Webinar on SDG 6-Clean Water and Sanitation, organized by Sustainable Development Forum, The Institution of Engineers (India) in association with ERDMP Academy, Bhopal, 17 March, 2021.
20. Delivered talk on in ATAL FDP on ‘Advances in Waste Treatment Technologies’ organized by Department of Civil Engineering, Government Engineering College, Modasa on August 23, 2021.
21. Delivered talk on “Innovative Technologies for the Waste Management” in the Webinar on Development of innovative technologies for waste recycling and sustainable management, Organized by Environmental Science and Engineering Department (ESED) Indian Institute of Technology Bombay, 3 September 2021.
22. Delivered key note on “Air Pollution Control Technology” in the Webinar on “World Ozone Day’, B.K. Birla College, Kalyan, 16 September 2021.
23. Delivered talk on “Issues & Challenges in Reducing Carbon Footprint” in the AICTE (ATAL) Sponsored Faculty Development Program on Carbon Footprint Reduction: Issues and Challenges, Mining Engineering Department, Goa College of Engineering, Farmagudi, 10th November 2021.

Harish C. Phuleria

24. Phuleria HC, 2021. “Research methods: Data analysis plan, plotting and diagnostics” in the week-long *Research Methodology Workshop for Science Scholars*. Organized by UGC-HRD Centre, University of Kashmir, Srinagar, Virtual meeting, 17 Nov, 2021.

25. Phuleria HC, 2021. “Monitoring and Modelling the long-term air pollution exposures in various urban/rural micro-environments” in 5-day FDP on “*Green Technology & Sustainability Engineering*”. BIT Durg, Chhattisgarh, Virtual meeting, 10 Nov, 2021.
26. Phuleria HC, Anand A, 2021. “Assessing air pollution exposures in urban slums” in *Air, Noise and Odour Pollution (ANOP) Conference*. NIT Surat, Surat, Virtual meeting, 23 Oct, 2021.
27. Phuleria HC, 2021. “Urban air pollution: Why you should care!” in the *Abhyas Mahotsav*. Organized by B.K. Birla College, Kalyan, Virtual meeting, 12 Aug, 2021.
28. Phuleria HC, Raparathi N, 2021. “Estimating air emissions from real-world on-road vehicular fleet” in the *ATAL FDP on Air, Noise and Odour Pollution (ANOP-2021)*, organized by SVNIT Surat, GJ, Virtual meeting, 19 Jul, 2021.

Munish Kumar Chandel

29. Expert lecture on Different ways for the Transport of Carbon Dioxide for CCS in CEP course CEP course on CCUS for NTPC. 2 April 2022, IIT Bombay.
30. Expert lecture on 'Landfill Mining' online ATAL FDP on Environmental Geotechnology, June 21-25, 2021, NIT Goa.
31. Expert lecture on 'Waste to Energy: Opportunities and Challenges'. Advancements in Sustainable Waste Management (ASWM-2021)" 24th – 30th June 2021 in the School of Infrastructure, Indian Institute of Technology Bhubaneswar.

Srinidhi Balasubramanian

32. Distinguished Guest Speaker for the fifth edition of Students' Research Convention (SRC), IIT Kanpur. Topic – “Women in Engineering: An Outlook”. March 2022. Online.

Subhankar Karmakar

33. Invited talk on Urban Flood Risk Management, AICTE short-course, IIT Madras, March 22 - 27, 2021.
34. Keynote speaker in the online faculty development programme “State-of-the-Art Experimental and Numerical Techniques in Civil Engineering” organized by the Department of Civil Engineering, Saintgits College of Engineering, sponsored by the A P J Abdul Kalam Technological University from 1st - 22nd March 2021, SAINTGITS COLLEGE OF ENGINEERING (Approved by AICTE & Affiliated to APJ Abdul Kalam Technological University), Kottayam, Kerala, 2 March 2021.
35. Hydro-climatic Extremes and Flood Management using Risk Mapping, ATAL ACADEMY, Government of India Sponsored Short Term Course, Organized by MME Department, NIT Durgapur; January 18-22, 2021.
36. Keynote lecture on “Mapping flood risk under changing climate” in the 26th International Conference on Hydraulics, Water Resources and Coastal Engineering HYDRO 2021 INTERNATIONAL at SVNIT Surat, Gujarat, India December 23-25, 2021.

Suparna Mukherji

37. Mukherji S. 2022 “Bioaugmentation for Treatment of Industrial Wastewaters: Opportunities and Challenges” Invited Presentation, Academy of Scientific & Innovative Research (AcSIR), CSIR, NEERI, India. 11th March 2022.

38. Mukherji, S. 2021 “Pharmaceuticals as Emerging Contaminants: Challenges in Monitoring and Removal from Water and Wastewater” Lancaster University-GCRF Virtual Networking Event on Pharmaceutical and Personal Care Products in the Environment, held at MS Swaminathan School of Agriculture, Shoolini University, 28th July 2021.
39. Mukherji, S. 2021 “Application of Novel Microbes for Treating Industrial Waste and Wastewater” presented at the One Day National Seminar on “Paryavaranam” organized by the B.K. Birla College of Arts Science and Commerce, Kalyan, 23rd July 2021.

Swatantra P. Singh

37. Singh S. P., 2021 Laser-Induced graphene and Flash Graphene for Solid Waste Management , "*Webinar on the development of innovative technologies for waste recycling and sustainable management under Swachhata Pakhwada* Online 3 Sep 2021
38. Singh S. P., 2021 "Environmental Audit of ETPs for Sustainability," Sustainable Approach for the Green Environment, Online 2022-10-16

Tabish Nawaz

39. Tabish Nawaz, 2022, “Decentralized wastewater treatment technologies, resource recovery and water reuse”, Workshop on An Overview of Recent Advances in Water and Wastewater Treatment Technologies, 10-11 January 2022, Online
40. Tabish Nawaz, 2022, “Application of Natural Adsorbents for Contaminant Removal from Water and Wastewater”, Workshop on Application of Nanotechnology in Water and Wastewater Treatment, 13-14 January 2022, Online

• International

Amritanshu Shriwastav

1. Delivered an invited talk on "Sonophotocatalytic Process for the Degradation of Pharmaceutically Active Compounds" in the “Symposium on Emerging Contaminants: Fate, Transport and Remediation Aspects” organized at IIT Bombay in online mode on 22nd February 2022.

Anil Kumar Dikshit

2. Delivered Invited Talk Titled “Innovations in Harnessing Bio-Energy from Industrial Wastes: Case Study of Distillery Industry” in RIN Symposium on organized by Russian Indian Network, October 20, 2021
3. Delivered an invited talk on “Harnessing Bioenergy from Distillery Industry” in RIN-Online Symposium on Energy Technology sponsored by Russian Indian Network, October 20, 2021.

Harish C. Phuleria

4. Phuleria HC, Patra A, 2021. “Assessing air pollution exposures in vehicular cabins in urban metropolitan cities” in the *Indian International Conference in Air Quality Management (IICAQM 2021)*. Jointly organized by IIT Madras and IIT Guwahati, Virtual meeting, 17 Dec, 2021.

Munish Kumar Chandel

5. Expert lecture on “Solid waste management at food processing facilities” in Shastri Indo-Canadian Institute (SICI) Symposium on Sustainable Developments in Local Land and Food Systems: Socioeconomic, Technological, and Environmental Aspects. 22 March 2022 - Online.
6. Key note speaker in International Conference on Environmental Science and Engineering' (ICESE-2022), IIT Bombay, 20-22 January 2022, Mumbai.
7. Key note speaker in International Conference on Sustainable Materials and Practices for Built Environment (SMPBE-2021). November 25-26, 2021. Manipal University Jaipur - Online.

Srinidhi Balasubramanian

8. Keynote lecture on “Lessons from Agricultural Air Pollution for Air Quality Managers”. Keynote lecture in the 2021 MARAMA Air Monitoring Training Committee Workshop. November 2021. Online.
9. Expert lecture on “The food we eat, the air we breathe” in Shastri Indo-Canadian Institute (SICI) Symposium on Sustainable Developments in Local Land and Food Systems: Socioeconomic, Technological, and Environmental Aspects. 22 March 2022 – Online.

7. CEP Organized:

Amritanshu Shrivastava

1. Organized a Level-2 Training Programme on "Greywater Management" for government officials of National Jal Jeevan Mission in online mode during 24 - 25 February 2022
2. Organized a Level-2 Training Programme on "Greywater Management" for government officials of National Jal Jeevan Mission in online mode during 06 - 07 December 2021
3. Organized a Level-2 Training Programme on "Greywater Management" for government officials of National Jal Jeevan Mission in online mode during 15 - 16 November 2021

Munish Kumar Chandel

4. Expert lecture on “Solid waste management at food processing facilities” in Shastri Indo-Canadian Institute (SICI) Symposium on Sustainable Developments in Local Land and Food Systems: Socioeconomic, Technological, and Environmental Aspects. 22 March 2022 - Online.
5. Co-coordinator and Co-Lecturer for 2-days course on Climate change risk assessment and water security challenges, 9-10 March 2022, Training Programme for National Jal Jeevan Mission, Department of Drinking Water & Sanitation Ministry of Jalshakti
6. Co-coordinator and Co-Lecturer for 2-days course on Climate change risk assessment and water security challenges, 23-24 February 2022, Training Programme for National Jal Jeevan Mission, Department of Drinking Water & Sanitation Ministry of Jalshakti

Subhankar Karmakar

7. Organized National Jal Jeevan Mission (NJJM) Level-1 course titled "Climate change risk assessment and water security challenges," conducted during 23-24 February 2022 (Session-1)
8. Organized National Jal Jeevan Mission (NJJM) Level-1 course titled "Climate change risk assessment and water security challenges," conducted during 9-10 March 2022 (Session-2)

Suparna Mukherji

9. Organized (Course Coordinator along with Prof. Amritanshu Shriwastav and Prof. Swatantra P. Singh) an Online training programme on “Greywater Management” ESED, IIT Bombay, November 15-16, 2021, December 6-7, 2021 and February 24-25, 2022.
10. Organized (as Convener jointly with all Co-investigators) an Online Workshop on “1st AMSPARE Workshop: Advanced Metagenomics Sensors and Photocatalysis for Antimicrobial Resistance Elimination” Jointly organized by IIT Bombay, and the University of the West of Scotland, Scotland, UK 9th November 2021

Tabish Nawaz

11. A training course on "Selection, Design, Construction and Operation & Maintenance of Water Treatment Plants," National Jal Jeevan Mission, Online, 20-21 October 2021.
12. A training course on "Selection, Design, Construction and Operation & Maintenance of Water Treatment Plants," National Jal Jeevan Mission, Online, 8-9 November 2021.
13. A training course on "Selection, Design, Construction and Operation & Maintenance of Water Treatment Plants," National Jal Jeevan Mission, Online, 21-22 February 2022.

V. S. Vamsi Botlaguduru

14. Coordinated an In-house Training Course on Selection, Design, Construction and Operation & Maintenance of Water Treatment for the National Jal Jeevan Mission (2021-2022).

8. Honorary Work:

Anurag Garg

1. Member, Technical Committees formed by MPCB and BMC.
2. Editorial Board Member as Associate Editor, Journal of Frontiers in Sustainability (April 2021 onwards)
3. Guest Co-Editor, Energies for special issue on “Sustainable Energy from Biomass and Waste” Editorial Office of ‘Energies’ Journal (February 2021 onwards)
4. Reviewed a proposal submitted to NIT Raipur for seed funding in January 2022.
5. Reviewed papers submitted to Water Research, Chemical Engineering Journal, and Energy Conversion and Management.
6. Reviewed Ph.D. theses submitted to IIT Kharagpur, IIT Roorkee, IIT Delhi, SVNIT Surat, NIT Surathkal, BITS Pilani (Goa campus), HNB Garwal University. (All in since April 2021).
7. Reviewed MSc thesis submitted to UAE University, UAE in December 2021.

Amritanshu Shriwastav

8. Internal Ph.D Defense Examiner Examiner for Ms. Pisharody Lakshmi Krishnakumar (Roll Number: 154180002), ESED, IIT Bombay
9. Advisor (e.g. to Govt. of India) Expert member of the Working Group under Scientific Panel on Contaminants in Food Chain for Microplastics, constituted by Food Safety and Standards Authority of India

Anil Kumar Dikshit

10. Organized the webinar on "Importance of Environmental Sustainability for Industries", April 24, 2021.
11. Panelist in the panel discussion session on "Challenges and Way Forward in Solid Waste Management" at the National Workshop on Solid Waste Management held at IIT Delhi, July 30-31, 2021.
12. Resource Person in the ESE Department empaneled as Key Resource Centre (KRC) under National Jal Jeevan Mission (NJJM) for Level-1: Senior Management Level and Level-2: Middle Management Level, since April 2021, Department of Drinking Water and Sanitation, Ministry of Jal Shakti, Govt of India.
13. Chief Guest in the Webinar on "World Ozone Day", B.K. Birla College, Kalyan, 16 September 2021.
14. External PhD Examiner on Board of Examination of R/s Mr Atul Kumar, Department of Environment Science & Engineering, IIT(ISM), Dhanbad on April 12, 2021 (PhD Topic: Assessment of Generation Rate, Energy Recovery Potential and Environmental Impacts of Municipal Solid Waste for Better Management)
15. External PhD Thesis Examiner on Board of Examination of R/s Naveen Kumar Chaturvedi, Department of Civil Engineering, NIT Hamirpur, on April 20, 2021 (PhD Topic: Evaluation of Fenton's Oxidation and Fenton-like Oxidation for the Treatment of Anisidines in Aqueous Medium).
16. Internal Examiner on Board of Examination for Research Scholar Bhupendra Sharma, Environmental Science & Engineering Department, IIT Bombay, May 25, 2021 (Thesis topic: Environmental Assessment of Urban Municipal Solid Waste Management Scenarios).

Harish C. Phuleria

17. External PhD Thesis Examiner of the viva voce defense of the PhD thesis titled "Chemical characteristics, health impacts and understanding of atmospheric processing of fine aerosols", IIT Kanpur, 2021.
18. External PhD Thesis Examiner of the PhD thesis titled "Source apportionment of resuspendable dust emitted from urban roads, its dispersion modelling and engineering control", IIT Madras, 2021.
19. External PhD Thesis Examiner of the viva voce defense of the PhD thesis titled "Source apportionment of resuspendable dust emitted from urban roads, its dispersion modelling and engineering control", IIT Madras, 2021.

Manoranjan Sahu

20. PhD thesis examiner, Dr. Anup Kumar Swain, NIT Rourkela, July 2021
21. PhD thesis external examiner, Dr. Simanchala Das, NIT Rourkela, 2020

Munish Kumar Chandel

20. Associate Editor, Journal of Institute Engineers India, Series A (Environmental Engineering).

Srinidhi Balasubramanian

21. Reviewer: Nature Food, Proceedings of the National Academy of Sciences United States, Atmospheric Environment, Journal of Environmental Management, Environment International.

Subhankar Karmakar

22. Vice-chairperson, International Conference on Flood Management (ICFM) Ad Hoc Committee, 2020 - till date
23. Contributing Author (Nov. 2020- Oct. 2023), Urban Climate Change and Research Network (UCCRN) < <https://uccrn.ei.columbia.edu/>>, of Third Assessment Report of Climate Change and Cities (ARC3.3), Earth Institute, Columbia University
24. Associate Editor, Frontiers in Water and Built Environment Journal, 2019 - till date
25. Managing Guest Editor, Special Issue (January 2021 - till date) - Water Security in Floodplains, Science of the Total Environment (IF 6.551), Elsevier
26. Managing Guest Editor, Special Issue: Lowering Risk by Increasing Resilience (August 2021 – till date) – with Prof. S P Simonovic and Prof. Z Cheng, Water, MDPI
27. Managing Guest Editor, Special Issue: Risk Forecasting of Extreme Weather (February 2021- till date), Sustainability, MDPI
28. Member of professional bodies (active): (i) International Water Association (IWA), (ii) American Geophysical Union (AGU), (iii) International Society of Ecotoxicology and Environmental Safety, Germany, (iv) Institute of Engineers, India
29. External reviewer and examiner of Ph.D. thesis, IIT Kharagpur, IIT Guwahati, Jadavpur University.
30. Reviewer for National and International Journals.
31. Reviewer of (1) DST, (2) MoWR, (3) MoES, Government of India proposals
32. Committee Member, DST, Engineering Science - Start-up Research Grant (SRG), Civil Engineering (2020 – till date).

Suparna Mukherji

33. Member of Editorial Board, Applied Nanoscience, Springer, since 2011.
34. Associate Editor, Journal of The Institution of Engineers (India): Series A; since April 2017.
35. Reviewer for National and International Journals.
36. Member of CSIR Thematic Committee on “Ecology, Environment, Earth Sciences, Ocean and Water (E3OW)” for review of Niche Creating Projects (NCPs)/Focus Basic Research (FBR) projects, October 2019- present.
37. Expert Member of BIRAC Area Review Panel on "Environment, Energy and Secondary agriculture" for review of projects in this area, July 2019-present.
38. External Expert, Departmental Assessment Committee (DAC) for consideration of cases of promotion of scientists in the Ministry of Environment, Forest and Climate Change (MoEF&CC), December 2021.
39. Chairperson, Selection Committee for the promotion of a faculty under the Career Advancement Scheme in the School of Environmental Studies of Jadavpur University, Kolkata, November 2021.
40. External Expert, PMRF selection process for Civil Engineering and Ocean Engineering, IIT Madras, March 2021.
41. Member of Monitoring Committee of Dahanu Taluka Environmental Protection Authority, November 2020 – present.

Tabish Nawaz

42. Reviewer: Environmental Science and Pollution Research, Springer; Biotechnology Advances, Elsevier.

9. Publications:

1. Books

Not available

2. Books (Edited)

Swatantra P. Singh

1. Singh, S. P., Agarwal, A. K., Gupta, T., and Maliyekkal, S. M. (2022),” *New Trends in Emerging Environmental Contaminants*. ed., Singapore, Springer.
2. Singh, S. P., Agarwal, A. K., Kumar, k., and Srivastav, S. K., (2022),” *Metal Nanocomposites for Energy and Environmental Applications*. ed., Singapore, Springer.

3. Chapters in Books

Anurag Garg

1. James, M.S., Garg, A., 2021. Electrochemical Treatment of Sulphidic Spent Caustic Waste Stream Generated from Petroleum Refineries. Book Series “Environmental Science and Engineering” Scopus Indexed proceedings (Springer Nature). (Accepted)
2. Singh, D.K., Garg, A., 2021. A Review on Hydrothermal Pretreatment of Sewage Sludge: Energy Recovery Options and Major Challenges. In “Advanced Organic Waste Management: Sustainable Practices and Approaches”, Editors: C. M. Hussain & S. Hait, Elsevier publication, 2021. (Accepted)
3. Gupta, D., Mahajani, S.M., Garg, A., 2021. Energy Densification of Juice Waste Using Hydrothermal Carbonization. In “Integrated Approaches Towards Solid Waste Management”, Editor: Ajay S. Kalamdhad, Springer publication, 2021, 165-176.
4. Singh, S., Garg, A., 2021. Advanced Oxidation Processes for Industrial Effluent Treatment. Published in an Edited book “Advanced Oxidation Processes for Effluent Treatment Plants” Editor: Maulin P. Shah, Elsevier publication, 2021, 255-272.

Amritanshu Shriwastav

5. Sethulekshmi, S., Kothawale, S.S., Krishnan, S., Karim, A.V., Kalbar, P., Singh, S.P., Shriwastav, A.* (2022). Occurrence, fate, and health hazards of microplastics pollution. In: Singh S.P., Agarwal A.K., Gupta T., Maliyekkal S.M. (eds) *New Trends in Emerging Environmental Contaminants*. Energy, Environment, and Sustainability. pp. 31–65. Springer, Singapore.
6. Karim, A.V., Krishnan, S., Sethulekshmi, S., Shriwastav, A.* (2022). Phthalate esters in the environment: An overview on the occurrence, toxicity, detection, and treatment options. In: Singh S.P., Agarwal A.K., Gupta T., Maliyekkal S.M. (eds) *New Trends in Emerging Environmental Contaminants*. Energy, Environment, and Sustainability. pp. 131–160. Springer, Singapore.

7. Kanwar, B., Barbhuiya, N.H., Kharade, I.V., Shriwastav, A., Singh, S.P.* (2022). Application of Microbial Fuel Cells for the Treatment of Emerging Contaminants from Wastewater: An Overview. In: Singh S.P., Agarwal A.K., Gupta T., Maliyekkal S.M. (eds) *New Trends in Emerging Environmental Contaminants. Energy, Environment, and Sustainability*. pp. 509–526. Springer, Singapore.
8. Krishnan, S., Karim, A.V., Shriwastav, A.* (2021). Photocatalysis for the removal of environmental contaminants. In: Singh S.P., Rathinam K., Gupta T., Agarwal A.K. (eds) *Nanomaterials and Nanocomposites for Environmental Remediation. Energy, Environment, and Sustainability*. pp. 163–203. Springer, Singapore.
9. Dixit, N., Shriwastav, A., Singh, S.P.* (2021). Metal and carbon-based nanomaterials for the water disinfection. In: Singh S.P., Rathinam K., Gupta T., Agarwal A.K. (eds) *Nanomaterials and Nanocomposites for Environmental Remediation. Energy, Environment, and Sustainability*. pp. 59–93. Springer, Singapore.

Harish C. Phuleria

10. Navinya C, Yadav S, Karri RR, Phuleria HC. 2021. Review of Air quality during COVID-19 lockdown and its implication towards Sustainable Development goals. Accepted for publication in *Environmental and Health Management of Novel Coronavirus Disease (COVID-19)*, Edited by Karri RR, Deghnani MH, Roy S, Elsevier, London, UK.

Manoranjan Sahu

11. Manoranjan Sahu, Vasudev Malyan, Y.S. Mayya, 2020, *Technologies for Controlling Particulate Matter Emissions from Industries*, Springer Nature Singapore, June 2020
12. Chinmoy Mandal, Manoranjan Sahu, 2020, *Application of Metal and Metal Oxide Nanoparticles as Potential Antibacterial Agents*, Springer Nature Singapore, June 2020

Munish Kumar Chandel

13. Ayush Singh, Roshan V. Mankhair and Munish K. Chandel (2022). “Open dumps and circular economy: Assessing landfill mining potential, benefits and challenges for Indian dumpsites”, *Circular Economy in Municipal Solid Waste Landfilling: Biomining & Leachate Treatment*. Springer Nature, Singapore

Subhankar Karmakar

14. Karmakar, S., Sherly, M.A. and Mohanty, M., (2022). Urban Flood Risk Mapping: A State-of-the-Art Review on Quantification, Current Practices, and Future Challenges. *Advances in Urban Design and Engineering*, pp.125-156.
15. Ghosh, M., Karmakar, S. and Ghosh, S., (2022). Flood Modelling for an Urban Indian Catchment: Challenges and Way Forward. In *Climate Change and Water Security* (pp. 51-62). Springer, Singapore.
16. Deo, A., Arora, A. and Karmakar, S., (2022). Impact of Evaporation Losses from On-Farm Reservoirs on the Economics of the Farming System. In *Water Resources Management and Sustainability* (pp. 109-129). Springer, Singapore.
17. Yadav V., Karmakar, S. (2021). Multi Criteria Decision Making for Sustainable Municipal Solid Waste Management Systems. In: Patnaik S., Tajeddini K., Jain V. (eds) *Computational Management. Modeling and Optimization in Science and Technologies*, vol 18. Springer, Cham. https://doi.org/10.1007/978-3-030-72929-5_28.

Swatantra P. Singh

18. Misra U., Nishad V., Singh S. P.,[#] (2022) Introduction to Membrane Distillation and Its Application in Emerging Contaminants Removal. In: *P. Singh S., Agarwal A.K., Gupta T., Maliyekkal S.M. (eds) New Trends in Emerging Environmental Contaminants. Energy, Environment, and Sustainability*. Springer, Singapore. ^{#corresponding author}
19. Singh, S. P. [#], Agarwal, A. K., Gupta, T., and Maliyekkal, S. M. (2022) Introduction of New Trends in Emerging Environmental Contaminants. In: *P. Singh S., Agarwal A.K., Gupta T., Maliyekkal S.M. (eds) New Trends in Emerging Environmental Contaminants. Energy, Environment, and Sustainability*. Springer, Singapore. ^{#corresponding author}
20. Kanwar, B., Barbhuiya, N.H., Kharade, I.V., Shriwastav, A., Singh, S.P., [#] (2022) Application of Microbial Fuel Cells for the Treatment of Emerging Contaminants from Wastewater: An Overview. In: *P. Singh S., Agarwal A.K., Gupta T., Maliyekkal S.M. (eds) New Trends in Emerging Environmental Contaminants. Energy, Environment, and Sustainability*. Springer, Singapore. ^{#corresponding author}
21. Monachan, M., Dixit, N., Maliyekkal, S.M., & Singh, S. P. [#] (2022) Reverse Osmosis (RO) and Nanofiltration (NF) Membranes for Emerging Contaminants (ECs) Removal. In: *Singh, S.P., Aggarwal A.K., Gupta T., Maliyekkal S.M. (Eds), New Trends in Emerging Environmental Contaminants*. Springer, Singapore. ^{#corresponding author}
22. Kumar P., Kumar A., Nawaz T. Singh S. P.,[#] (2022), Electrocoagulation Process for the Removal of Emerging Pollutants in Water and Wastewater. In: *Singh, S.P., Agarwal, A.K., K., Gupta, T., Maliyekkal, S. M. (Eds.), New Trends in Emerging Environmental Contaminants*. Springer, Singapore. ^{#corresponding author}
23. Koli M., Jashrapuria K., Johari A., & Singh, S.P., [#] (2022), Sequestering Groundwater Contaminants via Emerging Nanocomposite Adsorbents. In: *Singh S.P., Agarwal A.K., Kumar K., Srivastav S.K. (eds) Metal Nanocomposites for Energy and Environmental Applications. Energy, Environment, and Sustainability*. Springer, Singapore. ^{#corresponding author}
24. Reddy, S, Barbhuiya, N.H & Singh, S.P.,[#] (2022). Point-of-use drinking water treatment systems and their performance in removal of emerging contaminants In: *Singh, S.P., Agarwal, A.K., Gupta, T., Maliyekkal, S.M. (Eds), New Trends in Emerging Environmental Contaminants*. Springer. ^{#corresponding author}
25. Sethulekshmi S., Kothawale S. S., Krishnan S., Karim A. V., Kalbar K., Singh S. P., Shriwastav A. (2022) Occurrence, Fate, and Health Hazards of Microplastics Pollution, In: *Maliyekkal S. M., Singh S. P. (Eds.), New Trends in Emerging Environmental Contaminants*. Springer Nature.
26. Sharma R., Kalbar P., Srivastav S.K., Kumar K., Singh S.P., [#] (2022) Metal Nanocomposite Synthesis and Its Application in Electrochemical CO₂ Reduction. In: *Singh S.P., Agarwal A.K., Kumar K., Srivastav S.K. (eds) Metal Nanocomposites for Energy and Environmental Applications. Energy, Environment, and Sustainability*. Springer, Singapore. ^{#corresponding author}
27. Singh, S. P. [#] Agarwal, A. K., Kumar, k., and Srivastav, S. K., (2022),” Introduction of Metal Nanocomposites for Energy and Environmental Applications. In: *Singh S.P., Agarwal A.K., Kumar K., Srivastav S.K. (eds) Metal Nanocomposites for Energy and Environmental Applications. Energy, Environment, and Sustainability*. Springer, Singapore. ^{#corresponding author}

Tabish Nawaz

28. Nayyar, D., Shaikh, M, A, N. and Nawaz, T., 2022, Remediation of Emerging Contaminants by Naturally Derived Adsorbents," *New Trends in Emerging Environmental Contaminants* ,Ed. Swatantra

P. Singh, Avinash Kumar Agarwal, Tarun Gupta, Shihabudheen M. Maliyekk Singapore, Springer , 2021, pp.225-260

29. Kumar, P., Kumar, A., Nawaz, T., and Singh, S.P., 2022, Electrocoagulation Process for the Removal of Emerging Pollutants in Water and Wastewater," New Trends in Emerging Environmental Contaminants ,Ed. Swatantra P. Singh, Avinash Kumar Agarwal, Tarun Gupta, Shihabudheen M. Maliyekk Singapore, Springer , 2021, pp. 487-508

4. Articles in Journals

a) National

Not available

b) International

Abhishek Chakraborty

1. Singh, N., Banerjee, T., Deboudt, K., Chakraborty, A., Khan, M. F., & Latif, M. T. (2021). Sources, Composition, and Mixing State of Submicron Particulates over the Central Indo-Gangetic Plain. *ACS Earth and Space Chemistry*, 5(8), 2052-2065.

Anurag Garg

2. Singh, S., Garg, A., 2022. Performance Evaluation of Black Liquor Derived Photocatalysts for the Oxidation of Synthetic and Simulated Pulp Bleaching Wastewaters. *Industrial & Engineering Chemistry Research*, 61(10), 3516-3529.
3. Khatri, I., Garg, A., 2021. Use of Heterogeneous Activated Carbon Supported Copper Catalyst for Catalytic Wet Oxidation of Biomethanated Spent Wash: Reaction Kinetics, Catalyst Stability, Catalyst Deactivation Kinetics and Biochemical Methane Potential. *Journal of Water Processing Engineering*, 44, pp. 12.
4. Gupta, D., Mahajani, S.M., Garg, A., 2021. Hydrothermal Carbonization of Household Wet Waste – Characterization of Hydrochar and Process Wastewater Stream. *Bioresource Technology*, 342, pp. 7.
5. Yadav, A., Singh, S., Garg, A., 2021. Optimisation Studies for Preparation of Sewage Sludge Derived Adsorbent and Ciprofloxacin Adsorption using the Synthesized Adsorbent. *Water Environment Research*, 93, 2754-2768.
6. Manu, M. K., Kumar, R., Garg, A., 2021. Effect of Microbial Inoculum and Leachate Circulation on the Performance of Rotary Drum Composter Used for Household Wet Biodegradable Waste. *Waste & Biomass Valorization*, 12, 6119-6137.
7. Singh, S., Garg, A., 2021. Conversion of Waste Materials into Heterogeneous Oxidation Catalysts for the Treatment of Chlorinated Organics. *Journal of Environmental Engineering, ASCE*, 147(2), pp. 7.
8. Malhotra, M., Garg, A., 2021. Characterization of value-added chemicals derived from the thermal hydrolysis and wet oxidation of sewage sludge. *Frontiers in Environmental Science and Engineering*, 15(1), pp. 14.

Amritanshu Shriwastav

9. Karim, A.V., Shriwastav, A.* (2021). Degradation of amoxicillin with sono, photo, and sonophotocatalytic oxidation under low-frequency ultrasound and visible light. *Environmental Research*. 200. pp. 111515.

Anil Kumar Dikshit

10. Kumar, A., Dikshit, A.K., Patil, R.S. (2021) Use of Simulated and Observed Meteorology for Air Quality Modeling and Source Ranking for an Industrial Region, *Sustainability*, Vol. 13(8), pp.1426.
11. Shinde, A.M., Dikshit, A.K., Odlare, M., Thorin, E., Schwede, S. (2021) Life Cycle Assessment of Bio-methane and Biogas-based Electricity Production from Organic Waste for Utilization as a Vehicle Fuel, *Clean Technologies and Environmental Policy*, Vol. 23, pp.1715-1725,
12. Aryan, Y., Dikshit, A.K. (2021) Environmental Performance Assessment of Batch Type Hot Mix Plant Using LCA, *Advance in Environmental Waste Management & Recycling*, Vol. 4(3), pp.156-160.
13. Kumar, A., Dhakhwa, S., Dikshit, AK (2022) Comparative Evaluation of Fitness of Interpolation Techniques of ArcGIS Using Leave-One-Out Scheme for Air Quality Mapping, *Journal of Geovisualization and Spatial Analysis* 6 (1), 1-11.

Harish C. Phuleria

14. Anand A, Phuleria HC. 2021. Assessment of indoor air quality and housing, household and health characteristics in densely populated urban slums. *Environment, Development and Sustainability*, 1-24.
15. Raparathi N, Phuleria HC. 2021. Real-world vehicular emissions in the Indian megacity: Carbonaceous, metal and morphological characterization, and the emission factors. *Urban Climate*, 39, 100955.
16. Singh V, Phuleria HC, Chandel MK. 2021. Unlocking the Nutrient Value of Sewage Sludge. *Water and Environment Journal*, 00, 1-11.
17. Anand A, Phuleria HC. 2021. Modeling indoor exposures to PM_{2.5} and black carbon in densely populated urban slums. *Building and Environment*, 200, 107940.
18. Raparathi N, Debbarma S, Phuleria HC. 2021. Development of real-world emission factors for on-road vehicles from motorway tunnel measurements. *Atmospheric Environment X*, 10, 100113.

Manoranjan Sahu

19. Vikas Kumar, Manoranjan Sahu, Evaluation of nine machine learning regression algorithms for calibration of low-cost PM_{2.5} sensor, *Journal of Aerosol Science*, Vol 157, September 2021, 105809,
20. Saptarshi Ghosh, Manoranjan Sahu, Phthalate Pollution and Remediation Strategies: A Review, *Journal of Hazardous Materials Advances*, 2021, Vol 6, 100065, 2022.
21. Vikas Kumar, Manoranjan Sahu, Pratim Biswas, Source Apportionment of Particulate Matter by Application of Machine Learning Clustering Algorithms, *Aerosol & Air Quality Research*, vol 33(3), 2022
22. Vikas Kumar, Vasudev Malyan, Manoranjan Sahu, Significance of feature selection and seasonal variation for calibration of low-cost PM sensor, *Atmosphere* 2022, 13(4), 587.

Munish Kumar Chandel

23. Sheeba Sekharan, Dipak R Samal, Harish C Phuleria, Munish K. Chandel, Shirish Gedam, Rakesh Kumar, Virendra Sethi, Amar R Supate, Subhankar Karmakar (2022), "River pollution monitoring over an industrial catchment in urban ecosystem: Challenges and proposed geospatial framework." *Environmental Challenges*, Volume 7, 100496.
24. Singh, Ayush and Munish K. Chandel (2021), "Valorization of fine fraction from legacy waste as fired bricks: A step towards circular economy." *Journal of Cleaner Production*. Volume 331,129918.
25. Singh, Ayush and Munish K. Chandel (2022), "Mobility and environmental fate of heavy metals in fine fraction of dumped legacy waste: Implications on reclamation and ecological risk." *Journal of Environmental Management*. Volume 304, 114206.
26. Sharma Bhupendra K. and Munish K. Chandel (2021), "Life Cycle Cost Analysis of Municipal Solid Waste Management Scenarios for Mumbai, India." *Waste Management*.124,293-302.
27. Najmul Haque Barbhuiya, Ashish Kumar, Ayush Singh, Munish K. Chandel, Christopher J. Arnusch, James M. Tour, and Swatantra P. Singh (2021), "The Future of Flash Graphene for the Sustainable Management of Solid Waste." *ACS Nano* 2021,15,10,15461–15470.
28. Negi, Rajhans and Munish K. Chandel (2021), "Analysing water-energy-GHG nexus in wastewater treatment plant of Mumbai metropolitan region, India." *Environmental Research*.196,110931.
29. Singh, Vipin, Harish C. Phuleria, and Munish K. Chandel (2021), "Unlocking the Nutrient Value of Sewage Sludge." *Water and Environment Journal*.

Srinidhi Balasubramanian

30. Balasubramanian, S., Hunt, N., Domingo, Gittlin, M., Colgan, K., Marshall, J.D., Robinson, A. L., Azevedo, I. M. L., Thakrar, S., Clark, M. A., Tessum, C. M., Adams, P., Pandis, S. and Hill, J. D. (2021) '*The food we eat, the air we breathe: A review of the fine particulate matter-induced air quality health impacts of the global food system*'. *Environmental Research Letters*, 16(10), 103004.
31. Thakrar, S.K., Tessum, C.W., Apte, J. S., Balasubramanian, S., Millet, D. B., Pandis, S. N., Marshall, J.D., and Hill, J.D. '*Global, high-resolution, reduced-complexity air quality modeling using InMAP (the Intervention Model for Air Pollution)*'. Accepted for publication in *PLoS One* in May 2022.

Subhankar Karmakar

32. Sekharan, S., Samal, D.R., Phuleria, H.C., Chandel, M.K., Gedam, S., Kumar, R., Sethi, V., Supate, A.R. and Karmakar, S.*, (2022). River pollution monitoring over an industrial catchment in urban ecosystem: Challenges and proposed geospatial framework. *Environmental Challenges*, 7, p.100496. *corresponding author
33. Nair, A.S., Verma, K., Karmakar, S., Ghosh, S. and Indu, J., (2022). Exploring the potential of SWOT mission for reservoir monitoring in Mahanadi basin. *Advances in Space Research*, 69(3), pp.1481-1493.
34. Singh, J., Ghosh, S., Simonovic, S.P. and Karmakar, S.*, (2021). Identification of flood seasonality and drivers across Canada. *Hydrological Processes*, 35(10), p.e14398. *corresponding author
35. Patel, P., Karmakar, S.*, Ghosh, S., Aliaga, D.G., and Niyogi, D, (2021). "Impact of green roofs on heavy rainfall in tropical, coastal urban area." *Environmental Research Letters*, IOP Publishing, 16(7), 074051. *corresponding author

36. Mohanty, M.P., Karmakar, S.*, (2021). "WebFRIS: An efficient web-based decision support tool to disseminate end-to-end risk information for flood management." *Journal of Environmental Management*, Elsevier 288, p.112456. *corresponding author
37. Hari, V., Dharmasthala, S., Koppa, A., Karmakar, S., Kumar, R., (2021) "Climate hazards are threatening vulnerable migrants in Indian megacities." *Nature Climate Change*, 11(8), 636-638.
38. Malakar, K., Mishra, T., Hari, V., Karmakar, S., (2021) "Risk mapping of Indian coastal districts using IPCC-AR5 framework and multi-attribute decision-making approach." *Journal of Environmental Management*, Elsevier, 294, 112948.
39. Budakoti, S., Chauhan, T., Murtugudde, R., Karmakar, S., Ghosh, S., (2021) "Feedback from vegetation to interannual variations of indian summer monsoon rainfall." *Water Resources Research*, American Geophysical Union, 57(5).
40. Mishra, H., Singh, J., Karmakar, S.*, Kumar, R., (2021). An integrated approach for modeling uncertainty in human health risk assessment, *Environmental Science and Pollution Research*, Springer, <https://doi.org/10.1007/s11356-021-14531-z>. *corresponding author
41. Tripathy, S.S., Karmakar, S.*, and Ghosh, S., (2021). "Hazard at weather scale for extreme rainfall forecast reduces uncertainty." *Water Security*, 14, p.100106. *corresponding author
42. Mohanty, M.P. Karmakar, S.*, (2021). Hydrodynamic Flood Modelling of Large Regions Under Data-Poor Situations: A Case Study of Jagatsinghpur District, Odisha. *International Journal of Business Analytics (IJBAN)*, 8(2), pp.1-16. *corresponding author
43. Ghosh, M., Singh, J., Sekharan, S., Ghosh, S., Zope, P.E., Karmakar, S.*, (2021). Rationalization of automatic weather stations network over a coastal urban catchment: A multivariate approach. *Atmospheric Research*, Elsevier, 254, p.105511. *corresponding author
44. Tripathy, S.S., Bhatia, U., Mohanty, M., Karmakar, S., Ghosh, S., (2021). Flood evacuation during pandemic: a multi-objective framework to handle compound hazard. *Environmental Research Letters*, IOP Publishing 16(3), p.034034.

Suparna Mukherji

45. Ghosh P. and Mukherji, S. 2021 "Elucidation of substrate interaction effects in multicomponent systems containing 3-ring homocyclic and heterocyclic polynuclear aromatic hydrocarbons" *Environmental Science Processes and Impacts*, 23: 1394-1404.
46. Ghosh P. and Mukherji, S. 2021 "Environmental contamination by heterocyclic polynuclear aromatic hydrocarbons and their microbial degradation" *Bioresource Technology*, 341, 125860.
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