

डॉ. स्मिता / Dr. Smita



सहायक आचार्य / Assistant Professor
पर्यावरण अध्ययन विभाग / Department of Environmental Studies
हरियाणा केन्द्रीय विश्वविद्यालय / Central University of Haryana
जांट-पाली, महेंद्रगढ़ (हरियाणा) / Jant-Pali, Mahendergarh, (Haryana) - 123031
Email: drsmita@cuh.ac.in; smita3skumar@gmail.com
Mobile: (+91) 7048998677

Academic/Research Positions

- 2022-present **Assistant Professor**, Central University of Haryana, Mahendergarh
2020-22 **Assistant Professor**, JC Bose UST, YMCA, Faridabad
2019-20 **Post-Doc**, CRDT, IIT Delhi
2017-19 **Post Doc Fellow**, Centre for Rural Development & Technology (CRDT), IITD
2016 **Assistant Prof (C)**, AIJHM College, Rohtak, Haryana
2006-08 **Lecturer (C)**, CRA College, Sonipat, Haryana
▪ **Research Experience: 10+ years; Teaching Experience: 6+ years**

Education

- 2011-17 **Ph.D.**, Environmental Science & Engineering, Deptt. of Env. Sc. & Engg, Guru Jambheshwar University of Science & Technology (GJUST), Hisar, Haryana, India
2008-10 **M. Tech.**, Environmental Science & Engineering, Department of Environmental Science and Engineering, GJUST Hisar, Haryana, India
2010 **Diploma in Industrial Safety**, DDE, Annamalai University
2002-04 **M. Sc.** Env. Sc. Deptt of Life Sciences, Maharshi Dayanand University Rohtak
98-2001 **B. Sc.** (Botany, Zoology, Chemistry) Hindu Girls College, Sonipat, Haryana, India

Achievement/Award/Fellowship

- 2021 Stanford University's list of **2%** most influential scientists in the world in the field of Environment & Environmental Biotech, published by Elsevier, 2021.
2021 Academic Excellence Award, JC Bose UST, YMCA, Faridabad.
2020 Academic Excellence Award, JC Bose UST, YMCA, Faridabad.
2017-19 SERB-National Post Doc Fellowship, DST
2013-16 **UGC-BSR SRF** UGC, New Delhi
2011-13 **UGC-BSR JRF** UGC, New Delhi
2012,13 **ASRB-NET Environmental Sciences**, ICAR, New Delhi
2012 **UGC-NET JRF**, Environmental Sciences UGC, New Delhi

Scientific Contribution (International/National)

- The Qatar National Research Fund, National funding agency of the State of Qatar
- The Research Council of Oman, National University of Science & Technology, Oman
- Member, Liquid Waste Management Subject Expert Group, Unnat Bharat Abhiyan (UBA)
- Central Muga Eri Research & Training Institute, Central Silk Board, Ministry of Textiles
- Sustainable Solutions for Environment (SSE), Powai, Mumbai
- Sustainable Approach for Green Environment LLP (SAGE), Powai, Mumbai
- Advisor/Educator, Shristi, Ecoskillarts
- 1st Virtual ISMET Meeting (The International Society for Microbial Electrochemistry and Technology)

University/Department positions & responsibilities

- Member Secretary, BoF, Faculty of Interdisciplinary Studies and Research, JCBUST
- Member Secretary, Board of Studies, Centre for Energy Studies, JCBUST
- Faculty Coordinator, M Tech Energy and Environmental Engg., CES, JCBUST (Nov 2020 to Aug 2022)
- Faculty Coordinator, Centre for Energy Studies, JCBUST (2020-22)
- Faculty Coordinator, Faculty of Interdisciplinary Studies and Research, JCBUST
- Member, Alumni and Corporate Affairs Cell, JCBUST
- Member, Board of Faculty, Faculty of Life Sciences, JCBUST
- Member, Board of Studies, Department of Env. Sc. and Engg., JCBUST
- Member, Department Research Committee, Dept. of Env Sc & Engg., JCBUST

Editorial Roles

- **Associate Editor**, Electrochemical Environmental Engineering (specialty section of Frontiers in Environmental Chemistry)
- **Review Editor**, Organic Pollutants

Doctoral/ Masters Supervision

- Doctoral Thesis: Ongoing- 02
- M Tech Dissertations (M Tech Energy and Env. Engg): Completed: 02
- PG Dissertation (M Sc Environmental Sciences) Completed (till 2022): 22

Research and Publications

- **Publications in peer review Journals: 47 (Total Impact Factor 278.652)**
(Google Scholar Citations 3500+; h-index 32; i10-index 50)

Total Number of Publications: 81

a) Total Research Papers Published in Reputed Peer-reviewed journals: 47

b) Edited Book with ISBN number: 05

d) Book Chapters in Proceedings of conferences with ISBN number: 02

e) Chapters in Edited Book: 22

Published Books

- Multifaceted "BioSensing Technology" (Nov 2022) Edited by **Dr Smita S Kumar**, Dr. Durga Madhab Mahapatra, and Dr. Lakhveer Singh, **Elsevier; ISBN: 9780323908078**.
- Metal-Organic Frameworks for Carbon Capture and Energy (October 2021). DOI: 10.1021/bk-2021-1393; Editor: Pooja Ghosh; **Smita S. Kumar**; and Lakhveer Singh ISBN13: 9780841298088 eISBN: 9780841298071 **American Chemical Society (ACS)**
- Metal-Organic Frameworks for Environmental Sensing (October 2021). DOI: 10.1021/bk-2021-1394; Editor: **Smita S. Kumar**; Pooja Ghosh; and Lakhveer Singh ISBN13: 9780841298101 eISBN: 9780841298095 **American Chemical Society (ACS)**
- Metal-Organic Frameworks for Environmental Remediation (October 2021) DOI: 10.1021/bk-2021-1395 Volume 1395, Editor: Pooja Ghosh; **Smita S. Kumar**; Lakhveer Singh; ISBN13: 9780841297845 eISBN: 9780841297838 by **American Chemical Society (ACS)**

Publications in Peer Reviewed Journals

2023

- Smita S. Kumar, Amit Kumar, Ajay Kumar Agrawal, Pooja Ghosh, Madan Kumar, Rimika Kapoor, Vivek Kumar, Sandeep K Malyan, Sumit Kumar, Lakhveer Singh, Landfill leachate valorization: A potential alternative to burden off resources and support energy systems *Fuel*, Volume 331, Issue 1 January 2023, Pages 125911, Publisher Elsevier (**IF 8.035**)

2022 (4)

- **Smita S. Kumar**, Amit Kumar, Ajay Kumar Agrawal, Pooja Ghosh, Madan Kumar, Rimika Kapoor, Vivek Kumar, Sandeep K Malyan, Sumit Kumar, Lakhveer Singh. Landfill leachate valorization: A potential alternative to burden off resources and support energy systems. *Fuel* (September 2022) Elsevier (**IF 8.035**)

- Mohit Nigam, Puranjan Mishra, Pradeep Kumar, Sunil Rajoriya, Pankaj Pathak, Shraddha Rani Singh, **Smita S. Kumar** & Lakhveer Singh. Comprehensive technological assessment for different treatment methods of leather tannery wastewater. *Environ Sci Pollut Res.* (June 2022) (IF 5.19) Springer <https://doi.org/10.1007/s11356-022-21259-x>
- Nitin Kumar Agarwal, Madan Kumar, Pooja Ghosh, **Smita S. Kumar**, Lakhveer Singh, Virendra Kumar Vijay, Vivek Kumar. Anaerobic digestion of sugarcane bagasse for biogas production and digestate valorization. *Chemosphere*, Volume 295, May 2022, 133893, (IF 8.943) Elsevier
- Bharti, J. S. Jangwan, **Smita S. Kumar**, Vivek Kumar, Amrish Kumar & Dushyant Kumar. A review on the capability of zinc oxide and iron oxides nanomaterials, as a water decontaminating agent: adsorption and photocatalysis. *Applied Water Science* volume 12, Article number: 46 (Feb 2022) (IF 5.411) Springer

2021 (11)

- Puranjan Mishra, Junsang Lee, Deepak Kumar, Recardo O. Lauro, Nazua Costa, Deepak Pathania, **Smita Kumar**, Jinwoo Lee, Lakhveer Singh. (2021). Engineered-Nanoenzyme with multifunctional properties for next generation biological and environmental applications" *Advanced Functional Materials*, Wiley-VCH GmbH, The Nature Indexed journal 32 (8), 2108650 (Impact Factor 19.93)
- Sandeep K Malyan, **Smita S. Kumar**, Ram Kishor Fagodiya, Pooja Ghosh, Amit Kumar, Rajesh Singh, Lakhveer Singh. Biochar for Environmental Sustainability in the Energy-Water-Agroecosystem Nexus. *Renewable and Sustainable Energy Reviews*; Volume 149, October 2021, 111379 ISSN: 1364-0321 Elsevier (IF 16.799)
- Sandeep K. Malyan, Arti Bhatia, Ram Kishor Fagodiya, **Smita S. Kumar**, Amit Kumar, Dipak Kumar Gupta, Ritu Tomer, Ramesh Chand Harit, Vinod Kumar, Niveta Jain, Himanshu Pathak. Plummeting global warming potential by chemical interventions in irrigated rice: A lab to field assessment, *Agriculture Ecosystems & Environment*, Volume 319, October 2021, 107545 ISSN: 0167-8809 Elsevier (IF 6.576)
- **Smita S Kumar**, Pooja Ghosh, Navish Kataria, Deepak Kumar, Sveta Thakur, Deepak Pathania, Vivek Kumar, Mohd Nasrullah, Lakhveer Singh. *The Role of Conductive Nanoparticles in Anaerobic Digestion: Mechanism, Current Status and Future Perspectives.* *Chemosphere* 280 (October 2021), 130601 (IF 8.943) Elsevier
- Deepak Pathania, Arush Sharma, Lakhveer Singh, **Smita Kumar** and A.K. Srivastava. *Bio-synthesized Cu-ZnO hetero-nanostructure for catalytic degradation of*

organophosphate chlorpyrifos under solar illumination. Volume 277, **August 2021**, 130315 **Chemosphere** (IF 8.943) Elsevier

- Sharma Mona, Sandeep K Malyan, Neha Saini, Bansal Deepak, ArivalaganPugazhendhi, **Smita S Kumar****Towards Sustainable Agriculture with Carbon Sequestration, and Greenhouse Gas Mitigation using Algal Biochar*; Volume 275, **July 2021**, 129856 **Chemosphere** (IF 8.943) Elsevier
- Dipak Ashok Jadhav, Arvind Kumar Mungray, Ambika Arkatkar, **Smita S. Kumar**. Recent Advancement in Scaling-up Applications of Microbial Fuel Cells: From Reality to Practicability. ***Sustainable Energy Technologies and Assessments*** 45 (24 June 2021) pp 101226 (IF 7.632) ISSN: 2213-1388 Elsevier
- Mihir Tanay Das, **Smita S Kumar**, Pooja Ghosh, Goldy Shah, Sandeep K Malyan, SomvirBajar, InduShekhar Thakur, Lakhveer Singh. *Remediation strategies for mitigation of phthalate pollution: Challenges and future perspectives*. 409 (5 May, 2021), 124496. ***Journal of Hazardous materials*** (IF 14.224) Elsevier
- Nguyen ThúyLan Chi, Susaimanickam Anto, Tharif khan Shan Ahamed, **Smita S. Kumar**, Sabarathinam Shanmugam, Melvin S. Samuel, Thangavel Mathimani, Kathirvel Brindhadevi, Arivalagan Pugazhendhi. *A review on biochar production techniques and biochar-based catalyst for biofuel production from algae*. ***Fuel***; Volume 287, 1 **March 2021**, 119411 (IF 8.035) Elsevier
- H. I. Owamah, M. I. Alfa, S.O. Oyebisi, P. C. Emenike, E.A. Oturo, S. Gopikumar, **Smita S. Kumar**. *Groundwater quality monitoring and perception issues in a popular Niger Delta university town in Nigeria*. Volume 12, **February 2021**, 100503. ***Groundwater for Sustainable Development***, ISSN 2352-801X Elsevier
- Alfa M. I., Owamah H. I., Onokwai, A. O., Gopikumar, S., Oyebisi S.O., **Smita S. Kumar**, Bajar, S., Olusegun David Samuel, Ilabor, S. C. *Evaluation of biogas yield and kinetics from the anaerobic co-digestion of cow dung and horse dung: a strategy for sustainable management of livestock manure*. 6, 425–434 (2021) ***Energy, Ecology and Environment***, ISSN 2363-7692 Springer Nature <https://doi.org/10.1007/s40974-020-00203-0>

2020 (11)

- Sharma Mona, **Smita S Kumar**, Vivek Kumar, Khalida Parveen, Neha Saini, Bansal Deepak, Arivalagan Pugazhendhi. *Green technology for sustainable biohydrogen*

production (Waste to energy): A Review. Science of the Total Environment 738 (1 August 2020):138481 (IF 10.753). Elsevier

- **Smita S Kumar**, Vivek Kumar, Veera Gnaneswar Gude, Sandeep K Malyan, Arivalagan Pugazhendhi. *Alkalinity and salinity favor bioelectricity generation potential of Clostridium, Tetrathlobacter and Desulfovibrio consortium in Microbial Fuel Cells (MFC) treating Sulfate-laden wastewater.* 306; June 2020, 123110 **Bioresource Technology (Impact factor 11.889) Elsevier**
- Jyoti Sharma, **Smita S Kumar**, Vivek Kumar, Sandeep K Malyan, Thangavel Mathimani, Narsi R Bishnoi, Arivalagan Pugazhendhi. *Upgrading of microalgal consortia with CO₂ from fermentation of wheat straw for the phycoremediation of domestic wastewater,* Volume 305 (June 2020) 123063 **Bioresource Technology (Impact factor 11.889) Elsevier**
- Sabarathinam Shanmugam, Thangavel Mathimani, Susaimanickam Anto, M. P., Sudhakar, **Smita S Kumar**, Arivalagan Pugazhendhi. *Cell density, Lipidomic profile, and fatty acid characterization as selection criteria in bioprospecting of microalgae and cyanobacterium for biodiesel production,* **Bioresource Technology**, 304 (May 2020) 123061 (Impact factor 11.889) Elsevier
- Rimika Kapoor, Pooja Ghosh, Madan Kumar, Subhanjan Sengupta, Asmita Gupta, **Smita S Kumar**, Vandit Vijay, Vivek Kumar, Virendra Kumar Vijay, Deepak Pant, *Valorization of agricultural waste for biogas based circular economy in India: A Research Outlook,* **Bioresource Technology**, 304 (May 2020) 123036 (IF11.889) Elsevier
- Manju Toor, **Smita S. Kumar**, Sandeep K. Malyan, Narsi R. Bishnoi, Thangavel Mathimani, Karthik Rajendran, Arivalagan Pugazhendhi. *An overview on bioethanol production from lignocellulosic feedstocks.* **Chemosphere** 242; (March 2020) 125080 (Impact factor 8.943) Elsevier
- Amit Kumar, Amit Kumar, Cabral-Pinto M.M.S., Ashish K. Chaturvedi, Aftab A Shabnam, Gangavarapu Subrahmanyam, Raju Mondal, Dipak Kumar Gupta, Sandeep K. Malyan, **Smita S. Kumar**, Shakeel A. Khan, Krishna K. Yadav. *Lead Toxicity: Health Hazards, Influence on Food Chain, and Sustainable Remediation Approaches.* **International journal of Environmental Research and Public Health.** 2020, 17(7), 2179, MDPI (Impact factor 3.39)
- Susaimanickam Anto, Subhra Sankha Mukherjee, Rhea Muthappa, Thangavel Mathimani, Garlapati Deviram, **Smita S Kumar**, Tikendra Nath Verma, Arivalagan

Pugazhendhi. *Algae as green energy reserve: Technological outlook on biofuel production* **Chemosphere** 242; (March 2020) 125079, (Impact factor **8.943**)Elsevier

- **Smita S. Kumar**, Kumar Amit, Swati Singh, Sandeep K. Malyan, ShaharBaram, Jyoti Sharma, Rajesh Singh, ArivalaganPugazhendhi. *Industrial wastes: Fly ash, steel slag and phosphogypsum- Potential candidates to mitigate greenhouse gas emissions from paddy fields.* **Chemosphere** 241 (February 2020) 124824 (**IF8.943**) Elsevier
- Pooja Ghosh; Madan Kumar; Rimika Kapoor; **Smita S Kumar**; Lakhveer Singh; Vandit Vijay; Virendra K Vijay; Vivek Kumar; InduShekhar Thakur. *Enhanced biogas production from municipal solid waste via co-digestion with sewage sludge and metabolic pathway analysis,* **Bioresource Technology** 296; 122275, 2020 (**IF11.889**)Elsevier
- Jyoti Sharma, Vivek Kumar, **Smita S Kumar***, Sandeep K Malyan, Thangavel Mathimani, Narsi R Bishnoi, Arivalagan Pugazhendhi. *Microalgal consortia for municipal wastewater treatment – lipid augmentation and fatty acid profiling for biodiesel production.* **Journal of Photochemistry and Photobiology B: Biology** 202; 11168, 2020 (**Impact factor 6.813**) Elsevier

2019 (10)

- **Smita S Kumar**, Vivek Kumar, Ritesh Kumar, Sandeep K Malyan, Arivalagan Pugazhendhi. *Microbial Fuel Cells as a Sustainable platform technology for Bioenergy, Biosensing, Environmental Monitoring, and other Low Power Device Applications.* **Fuel** 255, (November 2019) 115682 (**IF 8.035**) Elsevier
- **Smita S. Kumar**, Vivek Kumar, Ritesh Kumar, Sandeep K Malyan, Narsi R. Bishnoi. *Ferrous sulfate as an in-situ anodic coagulant for enhanced bio-electricity generation and COD removal efficiency from Landfill Leachate.* **Energy** 176; (2019) 570-581 (Impact factor **8.857**)Elsevier
- **Smita S Kumar**, Vivek Kumar, Sandeep K Malyan, Jyoti Sharma, Thangavel Mathimani, Marshal S. Maskarenj, Prakash C. Ghosh, Arivalagan Pugazhendhi. *Microbial Fuel Cells (MFCs) for bioelectrochemical treatment of different wastewater streams.* **Fuel** 254 (October 2019) 115526 (**IF 8.035**)Elsevier
- **Smita S Kumar**, Pooja Ghosh, Sandeep K Malyan, Jyoti Sharma, Vivek Kumar. *A comprehensive review on enzymatic degradation of the organophosphate pesticide Malathion in the environment.* **Taylor and Francis Journal of Environmental Science and Health, Part C** 37 (4); (2019) 288-329 (Impact factor **3.781**)

- Gowri Manogari Boovaragamoorthy, Murugadas A, Prakash Piruthiviraj, Arivalagan Pugazhendhi, Smita S. Kumar, Naif Abdullah Al-Dhabi, Kareem Ghilan MariadhasValanArasu, Thamaraiselvi Kaliannan. *Clinically important microbial diversity and its antibiotic resistance pattern towards various drugs*. Elsevier **Journal of Infection and Public Health** 12(6): (September 2019) 783-788 DOI: 10.1016/j.jiph.2019.08.008 (Impact factor **7.537**) Elsevier
- Sandeep K. Malyan, Arti Bhatia, **Smita S. Kumar**, Ram Kishor Fagodiya, Arivalagan Pugazhendhi, Pham Anh Duc. *Mitigation of greenhouse gas intensity by supplementing with Azolla and moderating the dose of nitrogen fertilizer*. **Biocatalysis and Agricultural Biotechnology** 20, July 2019, 101266 Elsevier
- Amrish Kumar, Bharti, Sandeep K Malyan, **Smita S Kumar**, Dharm Dutt, Vivek Kumar. *An assessment of trace element contamination in groundwater aquifers of Saharanpur, Western Uttar Pradesh, India*. **Biocatalysis and Agricultural Biotechnology** 20, July 2019, 101213. Elsevier
- Sandeep K. Malyan, Rajesh Singh, Meenakshi Rawat, Mohit Kumar, Arivalagan Pugazhendhi, Amrish Kumar, Vivek Kumar, **Smita S. Kumar***. *An Overview of Carcinogenic pollutants in groundwater of India*. **Biocatalysis and Agricultural Biotechnology** 21, September 2019, 101288 Elsevier
- Jyoti Sharma, **Smita S. Kumar**, Narsi R Bishnoi, Arivalagan Pugazhendhi. *Screening of and enrichment of high lipid producing microalgal consortia*. **Journal of Photochemistry & Photobiology, B: Biology** 192 (2019) 8-12 (Impact Factor **6.813**) Elsevier
- **Smita S Kumar**, Suddhasatwa Basu, Saloni Gupta, Jyoti Sharma, Narsi R. Bishnoi. *Bioelectricity generation using sulphate-reducing bacteria as anodic and microalgae as cathodic biocatalysts*. **Biofuels-UK/Taylor & Francis**10(1); (2019) 81-86 (Impact Factor **2.731**)

2018 (5)

- Selvam Sathiyavimal, Seerangaraj Vasantharaj, Devraj Bharathi, Mythili Saravanan, Elayaperumal Manikandan, **Smita S. Kumar**, Arivalagan Pugazhendhi. *Biogenesis of copper oxide nanoparticles (CuONPs) using Sidaacuta and their incorporation over cotton fabrics to prevent the pathogenicity of Gram negative and Gram-positive bacteria*. **Journal of Photochemistry & Photobiology, B: Biology**, 188; 2018; 126-134 (Impact Factor **6.813**) Elsevier

- Jaya Marry Jacob, Chinnannan Karthik, Rijuta Ganesh Saratale, **Smita S Kumar**, Desika Prabhakar, K. Kadirvelu, Arivalagan Pugazhendhi. *Biological approaches to tackle heavy metal pollution: A survey of literature*. **Journal of Environmental Management** 217, 56-70 (2018) (Impact Factor **8.91**) Elsevier
- Jyoti Sharma, **Smita S Kumar**, Narsi R. Bishnoi, Arivalagan Pugazhendhi. *Enhancement of lipid production from algal biomass through various growth parameters*. **Journal of Molecular Liquids** 269 (2018) 712-720 (Impact Factor **6.633**) Elsevier
- Arivalagan Pugazhendhi, **Smita S Kumar**, M. Manikandan, Muthupandian Saravanan. *Photocatalytic properties and antimicrobial efficacy of Fe doped CuO nanoparticles against the pathogenic bacteria and fungi*. **Microbial Pathogenesis** 122; 84-89 (IF **3.848**) Elsevier
- Rajashree Sanmuganathan, Davoodbasha Mubarak Ali, Desika Prabhakar, Harshiny Muthukumar, Nooruddin Thajuddin, **Smita S Kumar**, Arivalagan Pugazhendhi. *An enhancement of antimicrobial efficacy of biogenic and ceftriaxone-conjugated silver nanoparticles: green approach*. **Environmental Science and Pollution Research** 25: (2018) 10362-10370 (Impact Factor **5.19**) Springer Nature

2017 (5)

- **Smita S Kumar**, and Narsi R Bishnoi. *Coagulation of landfill leachate by FeCl₃: process optimization using Box-Behnken design (RSM)*. **Applied Water Science** 7(4); (2017) 1943-1953. (Impact Factor **5.411**) Springer
- **Smita S Kumar**, Suddhasatwa Basu, and Narsi R Bishnoi. *Effect of cathode environment on bioelectricity generation using a novel consortium in anode side of a microbial fuel cell*. **Biochemical Engineering Journal**, 121 (15 May 2017), 17-24 (Impact Factor **4.446**) Elsevier
- **Smita S Kumar**, Sandeep K Malyan and Narsi R Bishnoi. *Performance of buffered ferric chloride as terminal electron acceptor in dual chamber microbial fuel cell*. **Journal of Environmental Chemical Engineering** (Impact Factor **7.968**), (2017). 5(1), 1238-1243 Elsevier
- **Smita S Kumar**, Sandeep K Malyan, Suddhasatwa Basu and Narsi R Bishnoi. *Syntrophic association and performance of Clostridium, Desulfovibrio, Aeromonas and Tetrathiodibacter as anodic biocatalysts for bioelectricity generation in dual chamber*

microbial fuel cell. Environmental Science and pollution research. 24 (19), (2017) 16019-16030 (**Impact Factor 5.19**) Springer Nature

- Sandeep K Malyan, Arti Bhatia, Amit Kumar, Dipak Kumar Gupta, Renu Singh, **Smita S Kumar**, RituTomar, Om Kumar, N. Jain. *Methane production, oxidation and mitigation: A mechanistic understanding and comprehensive evolution of influencing factors.* Elsevier **Science of the Total Environment.** 572 (December), 2017; 874-896 (**IF 7.963**)

Book Chapters (24)

- Bidyut Kundu, Noorul Bashar, Siddhant Nagar, **Smita Kumar** (2023). The Role of Transition Metals in Hydrogen Evolution Reactions, In Book Transition Metal-Based Electrocatalysts: Applications in Green Hydrogen Production & Storage, Publisher, American Chemical Society
- Afsana, Amir Mansoori, **Smita S Kumar**, Sonia Bansal (November 2022) Development of paper biosensors using enzyme immobilized nanostructures using printing electronics, DOI: 10.1016/B978-0-323-90807-8.00007-5, In book: Multifaceted Bio-Sensing Technology Edition: First Chapter: 12 Publisher: Elsevier
- Sandeep K Malyan, Sumit Kumar, Rajesh Singh, Sandeep Singh, Gagan Anand, Shefali Upadhyay, Kajal Saini, **Smita S. Kumar** (2022). Algal Intervention as Nature Based Solution for treatment of Landfill Leachate. In Book Algae Based Bioelectrochemical Systems for Carbon Sequestration, Carbon Storage, Bioremediation and Bioproduct Generation, Eds. D Mahapatra, L Singh, SS Kumar, Elsevier, ISBN: 9780323910231
- Noor, **Smita S Kumar**, Sudheesh K Shukla, Suresh Kumar, Bindu Mangla (2022). Microbial Fuel Cells for Wastewater Treatment. In Book Algae Based Bioelectrochemical Systems for Carbon Sequestration, Carbon Storage, Bioremediation and Bioproduct Generation, Eds. D Mahapatra, L Singh, SS Kumar, Elsevier, ISBN: 9780323910231
- Kulvinder Bajwa, **Smita S. Kumar** and Narsi R. Bishnoi (2022). Algae-based bioelectrochemical systems for carbon sequestration, bioremediation, and co-generation of valuable chemicals: Challenges and Future prospects. In Book Algae Based Bioelectrochemical Systems for Carbon Sequestration, Carbon Storage, Bioremediation and Bioproduct Generation, Eds. D Mahapatra, L Singh, SS Kumar, Elsevier, ISBN: 9780323910231

- Monika Jain, **Smita S. Kumar**, Lalit Goswami (2022). Aerobic and anaerobic bioreactor systems for wastewater treatment In Book Techno-economics and Life Cycle Assessment of Bioreactors Post-Covid19 Waste Management Approach Pages 13-22, Elsevier ISBN 978-0-323-89848-5
- Metal–Organic Frameworks for Water Treatment (2021). Bharti, J.S. Jangwan, Vivek Kumar, **Smita S Kumar**, Amrish Kumar, PoojaYadav., Chapter: 5; Page no 125-154 DOI: 10.1021/bk-2021-1395.ch005; In book: Metal–Organic Frameworks for Environmental Remediation Editors: Pooja Ghosh, Lakhveer Singh, Smita S. Kumar, Publisher: ACS Publications; ISBN13: 9780841297845 eISBN: 9780841297838 DOI: 10.1021/bk-2021-1395
- Recent Advances and Challenges in Selective Environmental Applications of Metal–Organic Frameworks October 2021 Kajal Saini, ShivbabuYadav, Monika Jain, Arvind Gupta, **Smita S Kumar** DOI: 10.1021/bk-2021-1394.ch009 In book: Metal–Organic Frameworks for Environmental Sensing Chapter: 9 Publisher: ACS Publications
- Metal–Organic Framework Based Single-Atom Catalysts for Electrochemical CO₂ Sequestration (2021). Puranjan Mishra, Lakhveer Singh, **Smita S. Kumar**. DOI: 10.1021/bk-2021-1393.ch012 In book: Metal–Organic Frameworks for Carbon Capture and Energy Chapter: 12 Publisher: ACS Publications
- Metal Organic Frameworks as Catalysts for the Conversion of Lignin to Value-Added Products (2021) Nitin Kumar Agarwal, Kajal Saini, Vaishali Yadav, Shefali Upadhyay, **Smita S. Kumar**, Vivek Kumar. DOI: 10.1021/bk-2021-1393.ch005 Book Metal–Organic Frameworks for Carbon Capture and Energy Volume 1393 Editors: Pooja Ghosh, Lakhveer Singh, Smita S. Kumar, Publisher ACS Publications
- Zinc-Based Metal–Organic Framework for Heavy Metal Sensing, (2021). Afsana Khan, Mamta Giri, Kalpna, **Smita S Kumar**, Sonia Bansal. Chapter 7 pp 177-201 DOI: 10.1021/bk-2021-1394.ch007 In book: Metal–Organic Frameworks for Environmental Sensing; Volume 1394 Publisher: ACS Publications
- Metal–Organic Frameworks for Capturing Carbon Dioxide from Flue Gas (2021). Himani Sabherwal, Anamika Tewatia, **Smita S Kumar**, Manbir Singh, Navish Kataria; Chapter 14 pp 355-391; DOI: 10.1021/bk-2021-1393.ch014; In book: Metal–Organic Frameworks for Carbon Capture and Energy Volume 1395; Editors: Pooja Ghosh, Lakhveer Singh, Smita S. Kumar, Publisher: ACS Publications

- Sandeep K. Malyan, **Smita S. Kumar**, Om Singh, Ajeet Kumar, Dipak Kumar Gupta, Ajar NathYadav, Ram Kishor Fagodiya, Shakeel A. Khan, Amit Kumar. Understanding Methanogens, Methanotrophs, and Methane Emission in Rice Ecosystem. 2021, https://doi.org/10.1007/978-981-33-4508-9_12 Book Microbiomes and the Global Climate Change, Pages 205-224 Publisher **Springer** ISBN 978-981-33-4507-2
- Sandeep K Malyan, **Smita S Kumar***, Lakhveer Singh, Rajesh Singh, DipakJadhav, Vivek Kumar. *Bioelectrochemical Systems for Removal and Recovery of Heavy Metals*, 2021. Chapter 9 **Elsevier** In book: Bioremediation and nutrients and other valuable products recovery. Editors Lakhveer Singh; DurgaMadhabMahapatra; Sveta Thakur Publisher Elsevier <https://doi.org/10.1016/B978-0-12-821729-0.00005-1> ISBN 9780128217290
- Jadhav D.A., Chendake A.D., Ghoshal D., Mathuriya A.S., **Kumar S.S.**, Pandit S. *Advanced Microbial Fuel Cell for Biosensor Application to Detect Quality Parameters of Pollutants*, 2021, Chapter 6 **Elsevier** In book: Bioremediation and nutrients and other valuable products recovery. Editors Lakhveer Singh; DurgaMadhabMahapatra; Sveta Thakur <https://doi.org/10.1016/B978-0-12-821729-0.00003-8> ISBN 9780128217290
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- **Smita S Kumar**, Vivek Kumar, Suddhasatwa Basu. *Electroanalytical Techniques for Investigating Biofilms in Microbial Fuel Cells*, Chapter: 9; 149-163; September 2019 **John Wiley & Sons, Inc.** Bioelectrochemical Interface Engineering; Edition: First Eds. Dr. R. NavaniethaKrishnaraj and Dr. Rajesh Sani; <https://doi.org/10.1002/9781119611103.ch9> ISBN: 978-1-119-53842-4
- Abudukeremu Kadier, Mohd. Sahaid Kalil, Pankaj Kumar Rai, **Smita S. Kumar**, PeymanAbdeshahian, PeriyasamySivagurunathan, Hassimi Abu Hasan, Aidil Abdul Hamid, Azah Mohamed. *Microbial Electrolysis Cells (MECs): A Promising and Green Approach for Bioenergy and Biochemical Production from Waste Resources*. Chapter: 12; 209-234 September 2019, **John Wiley & Sons, Inc.** DOI: 10.1002/9781119611103.ch12 In book: Bioelectrochemical Interface Engineering Edition: 1st Publisher: John Wiley & Sons, Inc. <https://doi.org/10.1002/9781119611103.ch12> ISBN: 978-1-119-53842-4
- Sandeep K. Malyan, Amit Kumar, Swati Singh, **Smita S. Kumar**. *Role of Fungi in Climate Change Abatement through Carbon Sequestration*, Chapter: 11; 283-295, **Springer** Book: Recent Advancement in White Biotechnology through Fungi, Volume 3: Perspective for Sustainable Environments, edited by Yadav AN, Mishra S, Singh S and Gupta A Print ISBN 978-3-030-25505-3 Online ISBN **978-3-030-25506-0** 02 October 2019 DOI https://doi.org/10.1007/978-3-030-25506-0_11 Springer, Cham
- **Smita S Kumar**, Abudukeremu Kadier, Sandeep K Malyan, Altaf Ahmad, and Narsi R. Bishnoi. *Phytoremediation and rhizoremediation: Uptake, Mobilization, and Sequestration of Heavy Metals by Plants*. Chapter 15; Page no. 367-394, **Springer Nature**, Plant-Microbe Interactions in Agro-Ecological Perspectives; Volume 2: Microbial Interactions and Agro-Ecological Impacts Edition: First Editors: D. P. Singh et al DOI10.1007/978-981-10-6593-4_15; ISBN: 97891065927
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Academic Activities Organized

- National Science Day 2022 (25th Feb-1st March 2022) at JCBoseUST, YMCA Faridabad
- Science Conclave-2022 sponsored by Haryana State Council for Science, Innovation and Technology (HSCSIT), Haryana to celebrate the Azadi ka Amrit Mahotsav from April 28-29, 2022, JC Bose University of Science and Technology, YMCA, Faridabad.
- Two-Day online International Conference On 'Integrated Approaches in Science & Technology for Sustainable Future (IASTSF-2022)' 2 Feb 2022 to 1 March 2022; Organized by J. C. Bose University of Science and Technology, YMCA Faridabad in collaboration with ISC-American Chemical Society, Sponsored by HSCSIT, DST Haryana
- **ECOFEST-India International Science Festival 2021**, organized jointly by the MoES, Department of Science and Technology, Department of Biotechnology, and Council of Scientific and Industrial Research, in collaboration with Vijnana Bharati; 10th Dec to 13th Dec held at Panaji, Goa
- Two-day **hands-on training** for M. Tech. Energy and Env. Engg students on 'Basic Water and Wastewater Testing Parameters' at Haryana State Pollution Control Board, Faridabad on 22nd -23rd February, 2022.
- Three-day **hands-on training** for M. Tech. Energy and Env. Engg students on 'Air Testing Parameters' at IIT Delhi on 9-11 August, 2021.
- One-day **webinar** on Sustainable Buildings: Concepts and Design Strategies on 8 May 2021 in association with ASSOCHAM GEM.
- One-day **webinar** focusing Pollution Mitigation and Ecological Restoration on the occasion of Earth Day 22nd April 2021 in association with ASSOCHAM, Water and Energy Council, Shristi, and Unnat Bharat Abhiyan
- **Lab Visit** 'Solar Energy Lab, Physics Department, JamiaMiliaIslamia Delhi for M Tech EEE and PhD scholars on 24 March 2021
- **Lab Visit** "Centre for Nanoscience and Nanotechnology" JamiaMiliaIslamia Delhi for M Tech EEE and PhD scholars
- **National Conference** on 'Role of Indian Scientists in Sustainable Development organized on National Science Day Celebrations by the Faculty of Sciences held on 28th Feb.-1st March, 2021.

- Two-day **hands-on training** for M. Tech. Energy and Env. Engg students on ‘Basic Water and Wastewater Testing Parameters’ at Haryana State Pollution Control Board, Faridabad on 22nd -23rd February, 2021.
- One day **international webinar** on Science and Engineering for Nature Conservation on the occasion of World Environment Day 2020, 5th June, 2020, JC Bose University of Science & Technology, YMCA Faridabad in collaboration with ASSOCHAM and VIBHA
- Facilitated and Coordinated the **Signing of MoU** between ASSOCHAM GEM and JC Bose University of Science & Technology, YMCA Faridabad

Invited Talks

- All India Jat Heroes' Memorial College Rohtak, on National Webinar on World Ozone Day 16 September 2021
- Lecture in 1-Week Online Value-Added Course on 25th May 2021, Advanced Materials and Their Pathways (AMTP-2021), by Department of Physics, JC Bose UST, YMCA, Faridabad from 31st May – 04th June, 2021.
- Expert Lecture E-technical symposium Nigerian Institute of Environmental Engineers, Nigeria on 28 April 2021
- Expert Lecture in “Water Segment” India International Science Festival IISF-2020 on 23 Dec 2020

Participation (FDP/Conferences/Seminar/Symposia/Workshops/Training):

- One Week **Faculty Development Program** on Research Writing and Professional Ethics organized by Department of Civil Engineering J.C. Bose University of Science & Technology, YMCA, Faridabad on 07-13 September, 2021
- AICTE-DCRUST sponsored **Faculty Training Program (FTP)** on ‘Multidisciplinary Innovations for Sustainable Development’ organized by Centre of Excellence for Energy and Environmental Studies of DCRUST Murthal from August 23rd to August 28, 2021.
- One Day **Workshop** on "Research: Lab to Publications" organized by the Department of Chemistry and R&D Section of J. C. Bose University of Science and Technology, Y.M.C.A., Faridabad in association with American Chemical Society and Vigyan Bharti (Faridabad Unit) on 28 August'2021
- One-day **webinar** on “5G Technology: Bridge to Future” on 3rd July, 2021 organized by Department of Computer Engineering and Department of Electronics Engineering, J. C. Bose University of Science and Technology, YMCA, Faridabad in collaboration with National Telecommunications Institute for Policy Research, Innovation and Training.

- **Professional Development Program** (PDP-2021) from 28th June – 03rd July 2021 organized by J. C. Bose University of Science & Technology, YMCA, Faridabad.
- **One Day Workshop** on ‘Research Methodology’ organized by Research and Development Section, JC Bose UST, YMCA, Faridabad on 26 June 2021
- **Online workshop** on "Strategies for academic research and Publications" organized by Department of Computer Engineering, J.C. Bose University of Science and Technology, YMCA, Faridabad on 26th May, 2021.
- **Webinar** on the topic 'Importance of Environmental Sustainability for Industries' on April 24, 2021 organized by Sustainable Approach for Green Environment (SAGE), Indian Institute of Technology (IIT) Bombay and Maharashtra Pollution Control Board (MPCB)
- **2-week Online Refresher Course** in Environmental & Earth Sciences (held from 07-12-2020 to 19-12-2020) UGC-Human Resource Development Centre, Kurukshetra University, Kurukshetra
- **Online One-Week Faculty Development Program** on "Green Technologies & Environmental Sustainability (GTES-2020)", jointly organized by Department of Environmental Sciences and Department of Civil Engineering, J.C. Bose University of Science & Technology, YMCA, Faridabad from September 7-12, 2020.
- **Webinar** organized by TERI on “Estimation of the Current Emission and Sequestration Potential of different land use sectors to achieve Land Degradation Neutrality in India” held on 22nd July, 2020.
- **Fourth JNU Workshop** for Empowering Teaching through Online Mode (JNU-WETOM IV) on the theme ‘Going Online: Classroom, Field Work & Research’ held on July 11-12, 2020.
- **TEQIP-III sponsored Faculty Development Program** on Green Technology conducted by Department of Electrical Engineering, JCBOSEUST in association with Institution of Engineers (India), Faridabad local Centre from **18 to 20 July 2020**
- **Digital Transformation in Teaching Learning Process (DTITLP) course** organized by NPIU, and conducted by IIT Bombay on SWAYAM, 6th to 22nd April, 2020
- **5-day Faculty Development Program** on "Research in Modern Era" during 1-5 June 2020, Department of Mechanical Engineering J C Bose University of Science & Technology, YMCA
- **Two-Week Online Short-Term Training Program** on “Green Energy Technologies for Sustainable Development” Jointly Organized by National Institute of Technology, Kurukshetra and Government Engineering College, Bikaner from 11 - 20 June, 2020 under TEQIP-III: Mentoring/Twinning System
- **Art for environment swag for nature creativity for sustainability** 26th June 2020, Friday, **online workshop** organized by **Ecoskillarts, Shristi, and Katha**
- **Excellence in Peer review by T&F, Webinar training** “how to be an effective peer reviewer” 12th June, 2020

- 4th India **Water Impact Summit** 2019 Realizing Vision Ganga through Jal Jeewan Mission, 5-7 December 2019 **Vigyan Bhawan** New Delhi, Ministry of Jal Shakti, Government of India, National Mission for Clean Ganga (NMCG) and the Centre for Ganga River Basin Management and Studies (cGanga)
- **Workshop** on "Documentation of Successful case studies of water Conservation"- 31st July and 1st August, 2019 at National Institute of Rural Development and Panchayati Raj (**NIRDPR**), Rajendranagar, Hyderabad-500 030
- Documenting **water conservation case studies under MGNREGS**, 1 July, 2019, National Institute of Rural Development and Panchayati Raj (**NIRDPR**), Rajendranagar, Hyderabad-500 030
- International Conference on Climate Change towards Health and Agricultural Sustainability (**CCHAS- 2019**), February 18-20, 2019; Bio-electrochemical Treatment of Agrochemicals by Microbial Fuel Cell Technology. Department of Environmental Science & Engineering, Guru Jambheshwar University of Science & Technology, Hisar – 125001, Haryana, India
- One Day **Conference** On “**Carrying Capacity Approaches** in Environmental Management Leading to Sustainable Development” Organized by CSIR-National Environmental Engineering Research Institute (NEERI) Delhi Zonal Centre and Ministry of Environment, Forest and Climate Change (MoEF&CC), New Delhi
- **National consultative workshop on Solid and Liquid Resource Management (SLRM)** on 22nd and 23rd february 2018, Swachchh Bharat Mission-Gramin (SBM-G), Ministry of Drinking Water and Sanitation, Pravasi Bharatiya Kendra, Chanakyapuri, New Delhi
- **Third India Water Impact Summit** December 5-7, 2018 at VigyanBhawan, New Delhi, Center for Ganga River Basin Management and Studies (cGanga) led by IIT Kanpur and the National Mission for Clean Ganga (NMCG), MoWR, RD & GR, GoI.
- **International Conference** on Materials for Energy Applications (ICME-2018). Mixed microalgal consortia as biocathode for Bioelectricity production in Dual Chamber Microbial Fuel Cell. S. S. Jain Subodh PG (Auto.) College, Jaipur December 6-8, 2018
- International Conference on **Sustainable Energy and Environment (SEES)**. Microbial Fuel Cell Technology: A Potential Tool for Microbe Mediated Remediation, Electrosynthesis and Generation of Renewable Energy. Fitzwilliam College, University of Cambridge, Cambridge City, United Kingdom 18-19 June 2018
- 3rd **National Conference** on Environmental concern on 21st Century: Indian and global context. National Conference Landfill leachate treatment: An overview of technologies. Zakir Husain Delhi College (Evening), University of Delhi; Delhi – 110002; 27-28 March 2018
- **International Conference** on Advances in Agricultural & Applied Sciences for Promoting Food Security. Impact of Azolla application on nitrous oxide emission from rice soils. Hotel Mirage Lord Inn, Battishputli, Kathmandu, Nepal, 2017

- Statistical Application in Research Data Analysis **National Workshop** on Statistical Application in Research Data Analysis. Department of Bio and Nano Technology, Guru Jambheshwar University of Science & Technology; Hisar-125001, Haryana, India; 24-25 March 2017
- **International Conference** on Emerging Areas of Environmental Science and Engineering (**EAESE 2017**). Exploring power generation and COD removal efficiency of sulfate reducing and sulfur oxidizing bacteria in consortium. Department of Environmental Science & Engineering; Guru Jambheshwar University of Science & Technology; Hisar-125001, Haryana, India: 16-18 Feb. 2017
- **International Conference** on Nurturing Human Values in Youth: A Perspective of Srimad Bhagvad Gita Guru Jambheshwarji Maharaj institute of religious studies; Guru Jambheshwar University of Science & Technology; Hisar-125001, Haryana, India; 08-10 Dec 2016
- **National Symposium** on Managing Agriculture in a Changing Environment. National Symposium Efficiency of Aluminum Sulphate, Ferric Chloride and Ferrous Sulphate for COD removal from Landfill Leachate. Centre for Environmental Science & Climate Resilient Agriculture, ICAR- Indian Agricultural Research Institute, New Delhi; 01-02 Dec. 2016
- “Caring mother earth” (Earth-day celebration) **Earth Day**, 22 April, 2016 Department of Environmental Science & Engineering; Guru Jambheshwar University of Science & Technology; Hisar-125001, Haryana, India
- Recent Innovative Changes in Science & Technology, Humanities, Law and Commerce, in context of Human Welfare **National Seminar** on Impact of water management GHG Emission in Rice; 29th March 2016 DAV (PG) College, Muzaffarnagar, CCSU Meerut
- **National Symposium** on Environmental Toxicology. Bioremediation of heavy metals by microorganisms; 25-26 March 2016 Department of Zoology, CCSU Meerut, UP
- **National Conference on Environmental Concerns** of 21st century. Microbial fuel cells Technology: Food to energy conversion by Anode respiring bacteria; 21-22 March 2016. Zakir Hussain Delhi College (Evening), University of Delhi
- **National Conference** on Amelioration of Air Pollution Effects in Agricultural Crops. Physicochemical treatment of Landfill Leachate; 15th March 2016, Department of Botany, Ch. Chhotu Ram P.G. College, Muzaffarnagar (U.P.) 251001
- 1stAgricultural research & innovation conference Balanced fertilization: A key to Food Security & Environmental Sustainability. **National Conference** 24-25 Feb. 2016. Amity Institute of Organic Agriculture
- **56th Annual Conference** on Association of Microbiologist of India & International symposium on Emerging Discoveries in Microbiology. International Conference and Symposium 07-10 Dec. 2015. School of Life Sciences, Jawaharlal Nehru University, New Delhi-110067

- **Training on Bioinformatics tools and techniques for gene and protein analysis.** 06-07 March 2014. Department of Bio and Nano Technology, Guru Jambheshwar University of Science & Technology; Hisar-125001, Haryana, India
- **4th International conference on Advances in Energy Research (ICAER 2013).** Potential Applications of Microbial Fuel Cell Technology; 10-12 Dec 2013. Indian Institute of Technology Bombay
- **54th Annual Conference** of Association of Microbiologist of India & International Symposium on Frontier Discoveries and Innovations in Microbiology and Interdisciplinary Relevance. International Conference; and Symposium 17-20 Dec. 2013 Maharshi Dayanand University, Rohtak- 124001, Haryana, India

Profile Links

- **Vidwan:** <https://vidwan.inflibnet.ac.in/profile/268963>
- **Google Scholar:** <https://scholar.google.com/citations?hl=en&user=Evv8ZgkAAAAJ>
- **WoS Researcher ID:** O-4532-2019 <https://publons.com/researcher/2928653/smita-s-kumar/>
- **Scopus (ID 57194535380):** <https://www.scopus.com/authid/detail.uri?authorId=57194535380>
- **Orcid:** <http://orcid.org/0000-0002-9294-7634>
- **ResearchGate:** https://www.researchgate.net/profile/Smita_Kumar6
- **Linkedin:** <https://www.linkedin.com/in/dr-smita-s-kumar-7815bb1a/>