Brajesh Kr. Dubey, PhD, FIE, C.Eng

Dr. Brajesh Kr. Dubey is presently an Associate Professor – Environmental Engineering and Management, the In-charge of Sustainable Engineering and Circular Economy Research Laboratory in the Department of Civil Engineering at the Indian Institute of Technology – Kharagpur (IIT-KGP), India. Dr. Dubey received Ph.D. in Environmental Engineering Sciences from the University of Florida, Gainesville, USA. He received Outstanding International Student Award from the University of Florida during his PhD program. He has received BTech (Hons) in Civil Engineering from IIT-Kharagpur, India.

Dr. Dubey has over 16 years (post PhD) of research, teaching, and consulting experience within the broad fields of environmental, sustainable/resilient engineering and circular economy approaches, addressing the nexus among sustainability, resiliency, infrastructure, waste, energy, and the environment. His research expertise includes: (1) Life Cycle Assessment (LCA) and techno-economic assessment of emerging/next-generation technologies for solving sustainability challenges related to energy systems, built infrastructure and processing and manufacturing; (2) Decarbonization of the urban infrastructure, especially for integrated waste management systems; (3) Characterization and engineering applications of waste/recycled materials including beneficial reuse risk assessment; and (4) Resource Recovery from solid and liquid waste streams. His research has been funded by several national, international agencies such as United Nations Industrial Development Organization (UNIDO); National Geographic Society (NGS); International Transport Forum (ITF) - Organisation for Economic Cooperation and Development (OECD), Paris; Alliance to End Plastic Waste and Circular Initiative, Singapore; Canadian Foundation for Innovation (CFI); Natural Sciences and Engineering Research Council of Canada (NSERC); Department of Science and Technology (DST), India; Tennessee Department of Environment and Conservation; Florida Department of Environmental Protection; Auckland Regional Council, New Zealand among others. Prior to PhD, he has 4 years of industry experience as a Civil/Environmental Engineer in the area of petrochemical, refineries and offshore oil platforms.

Dr. Dubey is author of 115 journal papers, 4 edited books/conference proceedings, 25 book chapters, and 27 full conference papers (with h-index of 39. I10-index of 81 with over 4,700 citations as per Google Scholar, Scopus h-index of 32)... Dr. Dubey has given more than 50 invited presentations in various countries in the world including Canada, USA, China, Germany, India, South Korea, Thailand, and U.K.). Dr. Dubey has served or currently serves as an Associate Editor or Editorial Board Members of 5 different journals, including ASCE Journal of Hazardous, Toxic and Radioactive Waste, International Solid Waste Association (ISWA) Journal of Waste Management & Research -The journal for a Sustainable Circular Economy, Journal of Air and Waste Management Association, and Frontier Journal of Environmental Engineering and Science and Expert Opinion on Environmental Biology. He has also served on various professional committees, including the State Level Advisory Committee for Solid Waste Management, Ministry of Urban Development and Urban Affairs, Government of West Bengal, Kolkata, India. Co-Chair of Member, Organic Waste Facility Public Liaison Committee, City of Guelph, Ontario, Canada. He has served as ISWA Working Group member for the Groups on "Waste Minimization and Recycling", and on "Climate Change and Waste Management". He has also served as a Member of Working Group on "Risk Assessment" of Interstate Technology and Regulatory Council (ITRC), Washington, DC USA.

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Present Affiliations

Associate Professor - Environmental Engineering, Department of Civil Engineering, Indian Institute of Technology - Kharagpur, Kharagpur, West Bengal, India - 721302, E-mail: bkdubey@civil.iitkgp.ac.in, bkdubey@gmail.com, Phone: +91-3222-282874, +91-9434205884(mobile)

Education	
Year	Degree
2005	PhD (Environmental Engineering Sciences), University of Florida, Gainesville, FL, USA
1997	Bachelor of Technology (Hons), Civil Engineering, Indian Institute of Technology (IIT)
	Kharagpur, WB, India

Experience (Academic)

Experience (1)	reducinie)				
2015-	Associate Professor (Environmental Engineering) Department of Civil Engineering,				
onwards	Indian Institute of Technology – Kharagpur (IIT-KGP), West Bengal, 721302				
2018 (May	Visiting Associate Professor (Endeavour Fellow), Deakin University – Waurn Ponds				
to Sept)	Campus, Geelong, Australia (May to Sep 2018)				
2011-15	Assistant Professor& Graduate Faculty, Environmental Engineering Program, School				
	of Engineering, University of Guelph, 50 Stone Road East, Guelph, ON, N1G 2W1,				
	Canada				
2014-15	Adjunct International Faculty, Amrita Center for Sustainable Development, Amrita				
	Nagar, Coimbatore, Tamil Nadu, India				
2009-11	Assistant Professor& Graduate Faculty, Department of Environmental Health, 65				
	Lamb Hall, East Tennessee State University, PO Box 70682, Johnson City, TN,				
	37614, USA				
2008-09	Senior Lecturer, Department of Civil and Environmental Engineering, The University				
	of Auckland, Auckland, New Zealand, 1142.				
2006-08	Post Doctoral Fellow, Department of Environmental Engineering Sciences, University				
	of Florida, Gainesville, FL, 32611				

Experience (Industry)

2006 (part time)	Project Environmental Engineer, Innovative Waste Consulting Services LLC.	
	Gainesville, FL	
1997-01	Environmental Engineer, Engineers India Limited, New Delhi, India.	

Honors and Awards

2018 Endeavor Executive Fellowship from Department of Education and Training, Australian Government

2008 Certificate of Academic Excellence from Hinkley Center for Solid and Hazardous Waste Management, Gainesville, Florida, USA

2005 Outstanding International Student Award from College of Engineering, University of Florida, Gainesville, FL, USA

2004 Ron Cockcroft Award (RCA) from International Research Group on Wood Protection (IRG-WP), 2004; Stockholm, Sweden

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Expertise and Interests

- Life Cycle Assessment (LCA) and techno-economic assessment of emerging/next-generation technologies for solving sustainability challenges related to energy systems, built infrastructure and processing and manufacturing
- Decarbonization of the urban infrastructure, especially for integrated waste management systems
- Characterization and engineering applications of waste/recycled materials including beneficial reuse risk assessment
- Resource Recovery from solid and liquid waste streams, Integrated waste management issues
- Plastic Pollution Estimation, Fate and Transport and Mitigation

Training Programs/Courses Attended and Completed:

- Participated, Contributed in <u>Global Leadership Program on Circular Economy Preparing Leaders for the Transformation to a Circular Economy</u>, 17th -23rd June, 2018, Adelaide, Australia organized by Green Industries SA in partnership with Ekonnect Knowledge Foundation and Environmental Management Centre LLP and Circular Economy Alliance Australia.
- Completed the MOOC Course on Circular Economy An Introduction, 2018; offered by TU Delft and co-created with the Ellen MacArthur Foundation and the Leiden-Delft-Erasmus Centre for Sustainability.
- Completed and Acquired Certificate of Accreditation as Standard Mental Health First Aider after successful completion of the course and assessment organized by Mental Health First Aid, Australia, July 11-12, 2018.
- Training Workshop (2 Days) on "Life Cycle of Products, Processes & Services (LCA Training with Hands on practice using SimaPro for LCA Project Managers, Engineers and Designers)", Nov 28th&29th 2012, Organized jointly by Interuniversity Research Center for the Life Cycle of Products, Processes and Services (CIRAIG) and The Sustainability Learning Centre, Toronto, Canada
- Training Workshop on "Adding Sustainability to Engineering Education", Center for Sustainable Engineering, Syracuse University; June 4-5, 2012.
- Participated at the National Science Foundation (NSF) CAREER Workshop, Association of Environmental Engineering and Science Professors (AEESP) 2011 Research and Education Conference, University of South Florida, Tampa, Florida, July 10th 2011.
- Completed 2 Semester (2010-11) Course at East Tennessee State University titled "Faculty Grant Leadership Course". The faculty members who took the course were given assistance in the following specific activities: Refine and/or develop their research/academic program, Identification of funding sources, Targeting and "packaging" a proposal to funding agencies, Identifying and contacting the appropriate agency or sponsor staff for additional guidance and in developing a well "packaged" proposal.
- Attended and Participated at the National Science Foundation Workshop "NSF Day at Middle Tennessee State University", December 18, 2009 Murfreesboro, Tennessee.
- Completed 2 Semester (2009-10) Course at East Tennessee State University titled "Faculty Technology Leadership". This course supports faculty who are interested in integrating technology with education. Course content includes the use of course management system applications, multimedia applications, and applications required for efficient and effective delivery of electronic course materials. Production and incorporation of a multimedia learning unit into a course is the capstone project for this course. This course also prepares faculty to

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- develop and teach online courses.
- Bioreactor Landfill Workshop, Two-day Workshop on Design and Operational Issues of Bioreactor Landfill by Hinkley Center for Solid and Hazardous Waste Management, Orlando, Florida, May 2006.
- MINTEQA2 Two-day Workshop on Geochemical and Hydrological Modeling and Training, Organized by Allison Geosciences Consultants, Inc. at Atlanta, USA. May 2004.

Professional Associations

AEESP	Association of Environmental Engineering and Science Professors
ASCE	American Society of Civil Engineering
ISWA	International Solid Waste Association
ISSP	International Society of Sustainability Professionals
NSWAI	National Solid Waste Association of India (Life Member)

Professional and Community Activities (list of selected activities)

- 2020: Invited Lecture on "Circular Economy approaches in Waste Management" at National Institute of Technology Durgapur, Jan 22nd 2020.
- 2018: Invited Lecture on "Technology and Essence of Municipal Solid Waste Management" at National Institute of Forge and Foundry Technology (NIFFT), Ranchi, Sep 27th 2018.
- 2018-19: Popular Lecture (five events) on Swachhata hi Seva (Importance of Cleanliness) as part of Clean India Mission organized by Ministry of Information and Technology, Govt. of India, West Medinipur region, West Bengal India
- 2018: Thematic Speaker for Smart Resource Management Session as part of the Smart Cities Workshop – Sustainable Urban Development Organized by Heidelberg University, Germany; Observers Research Foundation, New Delhi; School of Planning and Architecture, New Delhi; in collaboration with Mizoram University, and Gottingen University, Aizawl, Mizoram, April 27, 2018.
- 2017: Thematic Speaker and Moderator for Smart Resources Management Session during India-EU Dialogue Smart Cities: Sustainable Urbanization, organized by Heidelberg University, Delegation of the EU to India, ORF, BayIND in Collaboration with SPA, CNRS, GIZ and Indo-German Chamber of Commerce, Presentation title: How to achieve Smart Resource Management for Sustainable Urbanization, Oct 13-14, 2017, Bangalore, India
- 2017: Presented on topic Integrated Waste Management for a Smart City, under the session Smart Resource Management during Smart Cities Workshop Sustainable Urban Development Organized by Heidelberg University, ORF, SPA and BayIND in Collaboration with Xavier University Bhubaneswar and Indo-German Chamber of Commerce, Sep 21-22, 2017.
- 2017 onward: Subject Expert Member of State Level Advisory Committee for Solid Waste Management, Ministry of Urban Development and Urban Affairs, Government of West Bengal, Kolkata, India.
- 2017: Chaired/Moderated a Session on "Fate and Presence of Environmental Contaminants in Communities" at the AEESP 2017 Conference, June 20-22, 2017, University of Michigan, Ann Arbor, Michigan
- 2016 onward: Member of the Team for Appraisal of Solid Waste Management (SWM) DPRs under Swacch Bharat Mission (Clean India Mission) for Urban Towns in Bihar, India.
- 2016 onward: Member, IIT Consortium responsible for Technical Project Appraisals of Projects Proposed under Namami Gange Program of National Mission of Clean Ganga (NMCG),

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Ministry of Water Resources and Ganga Rejuvenation, New Delhi, India. The panel meets once a month on average to review outstanding submitted project proposals for approval.

- 2016-2019: Associate Editor, Journal of the Air and Waste Management Association (JA&WMA), a Taylor and Francis Journal.
- 2016: Organizing Team Core Member: 6th International Conference on Solid Waste Management, Nov 24 to 26th, 2016 at Jadavpur University, Kolkata; organized in collaboration with The Energy and Research Institute (TERI), Indian Institute of Science – Center for Sustainable Technology and Indian Institute of Technology Kharagpur.
- 2016: Chaired the Session on "Mainstreaming Life Cycle Thinking in Decision Making Process" at the Indian Conference on Life Cycle Management (ILCM), Oct 17th -18th, New Delhi, India
- 2016: Co-Chair, National Conference on Electronic Waste Management, Jan 13-14, 2016, XLRI, Jamshedpur, India, Organized in collaboration with The University of Queensland, Australia and Xavier School of Management, Jamshedpur, India
- 2016: Program Officer for National Service Scheme (NSS) Unit #1 at Indian Institute of Technology-Kharagpur, Our unit worked with three elementary schools helping the teachers in innovative teaching methods in the science and math education. We also work in a village on water and sanitation issues.
- 2016: Book Proposal Review for the Book "Advances in Phytoremediation of Environmental Pollutants"/CRC Press/Taylor and Francis Group.
- 2015 onward: Editor-in-Chief for the Journal "Expert Opinion on Environmental Biology" http://www.scitechnol.com/expert-opinion-on-environmental-biology.php
- 2015 onward: Advisory Board Member, Clean Up and Recycle for Environment (CURE), NGO working in the area of Electronics Waste Management, Jaipur, Rajasthan.
- 2014-15: Member, Organic Waste Facility Public Liaison Committee, City of Guelph, Ontario, Canada.
- 2014 onward: Member "Council of Reference" Wasteaid a NGO connecting vulnerable communities to waste management resources and expertise
- 2014 Member, Scientific Committee, Global Development Symposium, University of Guelph, Guelph, Ontario May 4 May 7, 2014
- 2014: Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC) Collaborative Research and Development (CRD) Grant Program
- 2013 onward: Serving on AEESP's Student Services Committee
- 2013 onward: Serving as Writer and Reviewer for Training Resources Pack for Hazardous Waste Management being developed by International Solid Waste Association (ISWA) in association with United Nations Environmental Program (UNEP) and United Nations Industrial Development Organization (UNIDO)
- 2013-14: Co-Chair, City of Guelph Solid Waste Management Master Plan Review Public Steering Committee
- 2013 onward: Member, Expert Panel for International Institute of Waste Management, Bhopal, India
- 2013: Member, Working Group "Waste Minimization and Recycling", International Solid Waste Association
- 2013: Member, Working Group "Climate Change and Waste Management", International Solid Waste Association

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- 2013: Member Working Group on "Risk Assessment" of Interstate Technology and Regulatory Council (ITRC), 50 F Street, NW, Suite 350, Washington, DC 20001
- 2012-13: Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC) College and Community Innovation Grant Program
- 2012-13: Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC) Collaborative Research and Development (CRD) Grant Program
- 2012-13: Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant Program
- 2011-12Served as International Expert: Municipal Solid Waste Management and Institutional Strengthening for Environmental Sustainability, United Nations Industrial Development Organization (UNIDO) Country Project Nigeria, Programme for Implementation of Green Industry for POPs Pollution Prevention and Reduction
- 2012 Organizer and Moderator of Environmental Nanotechnology Session during the 28th
 Annual International Conference on Soils, Sediment, Water and Energy, Oct 15th to 18th, 2012,
 University of Massachusetts, Amherst, MA
- 2012 Present, Member-Editorial Board of the "Journal of Experts Opinion on Environmental Biology" SciTechnol An OMICS Group Initiative, Henderson, NV, USA
- 2012-Present, Member-Editorial Board of the "Journal of Waste Management" Hindawi Publishing Corporation, New York, USA
- 2011 Organizer and Moderator of Environmental Nanotechnology Session during the 27th
 Annual International Conference on Soils, Sediment, Water and Energy, Oct 17th to 20th, 2011,
 University of Massachusetts, Amherst, MA
- 2011 Solid Waste Management Book Proposal Review for Elsevier Limited, Oxford, UK
- 2011-Present, Member-Editorial Board of the "The Scientific World Journal of Environmental Chemistry", Hindawi Publishing Corporation, New York, USA
- 2011- Present, Member, Scientific Advisory Board, The Association for Environmental Health and Sciences Foundation, Amherst, MA
- 2011 EPA Proposal Review for RFA, EPA-ORD-NRMRL-C1-11-07
- 2010 Present, Consultant/Advisor to Zeal Environmental Technologies Limited, Takoradi, Ghana; a consulting firm who deals with management of oil drilling generated waste and West African Gas Pipeline Condensate.
- 2010, American Society of Public Health (ASPH) Working Group Member for the Global Health Core Competency Development Project, Washington DC
- 2010, NIEHS Proposal Review for RFA-ES-09-003 Hazmat Training at DOE Nuclear Weapons Complex and RFA-ES-09-004 Hazardous Materials Worker Health and Safety Training
- 2010, Reviewer, Diversity Research Grants, Tennessee Board of Regents, Nashville, Tennessee
- 2010 Member, Organizing Committee, 3rd International Congress of Environmental Research, University of Mauritius, Reduit, Mauritius, September 16-18, 2010
- 2009, Reviewer for Graduate Fellowship Applications under U.S. EPA's Science to Achieve Results (STAR) Program
- 2009 & 2007, Peer Reviewer for Proposals received by U.S. EPA's Office of Research and Development (ORD) Phase 1 Small Business Innovation Research (SBIR) Program.
- 2008, Coordinator, International Congress of Environmental Research (ICER-2008), Goa, India,

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December 18th –December 20th 2008.

 2007, Consultant to "World Bank" on Assessing Fate of Arsenic during the Management of Diseased Animal Wastes

Training Workshops/Short Term Courses Conducted (selected list)

2017: Design and Delivery of One Day Workshop on Integrated Waste Management at Bilaspur University, Bilaspur, MP, India, July 25th, 2017.

2017: Design and Delivery of Five Day Short Term Course on "Sustainable Engineering: Concepts and Applications" offered at College of Urban Construction and Environmental Engineering, Chongqing University, June 26th to June 30th, Chongqing, China.

2016: Design and Delivery of Three Day Short Term Course on "Introduction to Life Cycle Assessment: From Theory to Practical Applications" offered at Indian Institute of Technology (IIT), Kharagpur, WB, India, Sep 14th to 16th, 2016.

2016: Design and Delivery of Short Term Course on "Waste Management & Resource Recovery" with a focus on Urban Issues at College of Urban Construction and Environmental Engineering, Chongqing University, July 1st to July 9th, Chongqing, China

2016: Design and Delivery of Two Day Training Program on Electronic Waste Management at DVC Towers, Damodar Valley Corporation (a power sector company), Kolkata, Mar 17^{th} and 18^{th} , 2016; Kolkata, India

2015: Design and Delivery of One week Course on "Life Cycle Analysis (LCA) as a Tool for Sustainable Engineering", at College of Urban Construction and Environmental Engineering, Chongqing University, Dec 14th to Dec 18th, Chongqing, China

2015: Design and Delivery of 4-Day Course on "Electronic Waste (E-Waste) Management – Global Issues", at College of Urban Construction and Environmental Engineering, Chongqing University, Dec 21st to Dec 24th, Chongqing, China

2015: Co-Instructor for Training Workshop on "Waste Management" at Northern Coalfields Ltd., Singrauli, MP, India, November 16th, 2015.

2015: Co-Instructor for Capacity Building Programme on Hazardous Waste Management' at NTPC, Singrauli, MP, India, 17th -18th November, 2015.

2015: Co-Instructor and Facilitator for Capacity Building Training Program for Electronic Waste Management, Organized at Hotel Sagar Plaza, Pune, Oct 30th -31st, 2015 by International Institute of Waste Management, Bhopal, India.

2015: Co-Instructor for Short Term Course on "Land Acquisition, Rehabilitation and Environmental Clearance of Projects" Sept 15-19, 2015, Indian Institute of Technology (IIT), Kharagpur, West Bengal, India.

2013: Main Instructor at the Capacity Building Training/Workshop on Electronics Waste Management, Organized by International Institute of Waste Management, Bhopal; April 25-26, 2013, India.

PUBLICATIONS

I have published original research and review articles in several internationally reputed journals in the field of Environmental Engineering and Science and have attended and presented research papers/posters at several national and international conferences. These publications including technical reports are the outcomes from the various projects that I have worked with over last two decade.

Publication Summary:

Published (280): Referred Journal Articles (115), Book Chapters (25), Full Paper in Conference Proceedings (27), Abstracts (79), Magazine Articles (5), Technical Reviewed Project Reports (25), and Other Project Reports (8).

<u>Peer Reviewed Journal Publications:</u>(As on 13th Apr, 2022 Total Citation: 4741; h-index = 39, I-10 index = 81, as per Google Scholar). (* indicates supervised/mentored, PhD, Masters or Undergraduate students)

- 1. Panigrahi, S., *Kundu, D., *Banerjee, R., and Dubey, B.K., (2022). Enzyme pretreatment of yard waste to improve anaerobic biodegradability: Modeling the interactive effects of enzyme dose, treatment temperature and treatment duration on delignification. *Fuel*, 317, 123313. https://doi.org/10.1016/j.fuel.2022.123313
- 2. Das, C., ** Shafi, T., ** Pan, S., Dubey, B.K., and Chowdhury, S., (2022). Graphene-Based Macromolecular Assemblies as High-Performance Absorbents for Oil and Chemical Spills Response and Cleanup. *Journal of Environmental Chemical Engineering*, 107586. https://doi.org/10.1016/j.jece.2022.107586
- 3. Venna, S., Sharma, H.B., Mandal, D., Reddy, H.P., Chowdhury, S., Chandra, A., and Dubey, B.K., (2022). Carbon material produced by hydrothermal carbonisation of food waste as an electrode material for supercapacitor application: A circular economy approach. *Waste Management and Research*, 0734242X221081667. https://doi.org/10.1177%2F0734242X221081667
- 4. Sharma, H. B., Vanapalli, K. R., and Dubey, B. K., (2022). Study on the process wastewater reuse and valorisation during hydrothermal co-carbonization of food and yard waste. *Science of The Total Environment*, 806(4), 150748. https://doi.org/10.1016/j.scitotenv.2021.150748
- 5. Sathe, S. M., ** Chakraborty, I., ** Dubey, B. K., and Ghangrekar, M. M., (2022). Microbial fuel cell coupled Fenton oxidation for the cathodic degradation of emerging contaminants from wastewater: Applications and challenges. *Environmental Research*, Volume 204, 112135. https://doi.org/10.1016/j.envres.2021.112135
- 6. Sharma, H. B., *Vanapalli, K. R., *Samal, B., *Cheela, V. S., *Dubey, B. K., and Bhattacharya, J. (2021). Circular economy approach in solid waste management system to achieve UN-SDGs: Solutions for post-COVID recovery. *Science of The Total Environment*, 149605. https://doi.org/10.1016/j.scitotenv.2021.149605
- 7. Chakraborty, I., *Das, S., Dubey, B.K., and Ghangrekar, M.M. (2021). High-Density polyethylene waste-derived carbon as a low-cost cathode catalyst in microbial fuel cell. International Journal for Environmental Research, 15, 1085-1096. https://doi.org/10.1007/s41742-021-00374-6
- 8. Ananya C, Sudipta B, Vikas S, Joyanti H, Abyaya D, Baranidharan S, [#] Dubey B.K., Poornachandra S, and Chandra A, (2021) High-performance magnetic pseudocapacitors Direct correlation between specific capacitance and diffusion coefficients. *Electrochimica Acta*, Vol. 397, 139252 https://doi.org/10.1016/j.electacta.2021.139252
- 9. Sharma, H. B., ** Panigrahi, S. **, and Dubey, B. K., (2021) Food waste hydrothermal carbonization: Study on the effects of reaction severities, pelletization and framework development using approaches of the circular economy. *Bioresource Technology* 333, 125187. https://doi.org/10.1016/j.biortech.2021.125187
- 10. Sathe, S., M., ** Chakraborty, I., ** Cheela, V., S., ** Chowdhury, S., Dubey, B., K., and Ghangrekar, M., M., (2021). A novel bio-electro-Fenton process for eliminating sodium dodecyl sulphate from wastewater using dual chamber microbial fuel cell. *Bioresource Technology*, 341, 125850. https://doi.org/10.1016/j.biortech.2021.125850.
- 11. Singhal, A., # Gupta, A., Ghangrekar, M.M., and Dubey, B.K., (2021). Seasonal characterization of municipal solid waste for selecting feasible waste treatment

- technology for Guwahati city, India. *Journal of the Air & Waste Management Association*. https://doi.org/10.1080/10962247.2021.1980450.
- 12. Samal, B., ** Raja, K., ** Dubey, B.K., Bhattacharya, J., Chandra, S. ** and Medha, I. **, (2021). Influence of process parameters on thermal characteristics of char from copyrolysis of eucalyptus biomass and polystyrene: Its prospects as a solid fuel. *Energy*, p.121050. https://doi.org/10.1016/j.energy.2021.121050
- 13. Vanapalli, K.R., *Bhattacharya, J., Samal, B., *Chandra, S., *Medha, I. *and Dubey, B.K., (2021). Inhibitory and synergistic effects on thermal behaviour and char characteristics during the co-pyrolysis of biomass and single-use plastics. *Energy*, 235, p.121369. https://doi.org/10.1016/j.energy.2021.121369
- 14. Samal, B., *Vanapalli, K.R., *Dubey, B.K., Bhattacharya, J., Chandra, S. * and Medha, I., *(2021). Char from the co-pyrolysis of Eucalyptus wood and low-density polyethylene for use as high-quality fuel: Influence of process parameters. *Science of the Total Environment*, 794, p.148723. https://doi.org/10.1016/j.scitotenv.2021.148723
- 15. Cheela, V. R. S., *Ranjan, V. P., *Sudha, G, John, M., and Dubey, B. (2021) Pathways to sustainable waste management in Smart Cities in India". *Journal of Urban Management*. 10(4): 419-429. https://doi.org/10.1016/j.jum.2021.05.002
- 16. Cheela, V. R. S., ** Sudha, G, John, M., and Dubey, B. (2021) Characterization of municipal solid waste based on seasonal variations, source and socio-economic aspects". *Waste Disposal and Sustainable Energy*. https://doi.org/10.1007/s42768-021-00084-x
- 17. Vanapalli,K.R., ** Sharma,H.B., **Ranjan,V. P., ** Samal,B., ** Bhattacharya,J., Dubey,B.K., and Goel.S.(2021). Challenges and strategies for effective plastic waste management during and post COVID-19 pandemic. *Science of The Total Environment*,750, 141514. https://doi.org/10.1016/j.scitotenv.2020.141514
- 18. Cheela, V. R. S., *John, M., and Dubey, B. (2021) Quantitative determination of energy potential of refuse derived fuel from the waste recovered from Indian landfill. *Sustainable Environment Research*. 2021, 31, 24. https://doi.org/10.1186/s42834-021-00097-5
- 19. Cheela, V.R.S. *; John, M.; Biswas, W.K.; and Dubey, B. (2021) Environmental Impact Evaluation of Current Municipal Solid Waste Treatments in India Using LCA. *Energies*. 2021, 14, 3133. https://doi.org/10.3390/en14113133
- 20. Chakraborty, I., *Ghosh, D., Sathe, S.M., Dubey, B.K., Pradhan, D., and Ghangrekar, M.M. (2021). Investigating the efficacy of CeO₂ multi-layered triangular nanosheets for augmenting cathodic hydrogen peroxide production in microbial fuel cell, *Electrochimica Acta*, Volume 398, 139341. https://doi.org/10.1016/j.electacta.2021.139341
- 21. Sharma, H. B., *Vanapalli, K. R., *Barnwal, V. K. *, Dubey, B., and Bhattacharya, J. (2021). Evaluation of heavy metal leaching under simulated disposal conditions and formulation of strategies for handling solar panel waste. *Science of The Total Environment*, 146645. https://doi.org/10.1016/j.scitotenv.2021.146645
- 22. Mittapalli, S., ** Sharma, H. B., and Dubey, B. K. (2021). Hydrothermal carbonization of anaerobic granular sludge and co-pelletization of hydrochar with yard waste. *Bioresource Technology Reports*, 100691. https://doi.org/10.1016/j.biteb.2021.100691
- 23. Bhowmick, G.D., Sarmah, A.K., and Dubey, B., (2021). Microplastics in the NZ environment: Current status and future directions. *Case Studies in Chemical and Environmental Engineering*, 3, 100076. https://doi.org/10.1016/j.cscee.2020.100076
- 24. Vanapalli, K.R., ** Dubey, B.K., Sarmah, A.K., and Bhattacharya, J., (2021). Assessment of microplastic pollution in the aquatic ecosystems—An indian perspective. *Case Studies in Chemical and Environmental Engineering*, 3,100071. https://doi.org/10.1016/j.cscee.2020.100071

- 25. Vanapalli,K.R., *Bhattacharya,J., Samal,B., *Chandra,S., *Medha,I., *and Dubey,B.K.,(2021). Single-use LDPE Eucalyptus biomass char composite produced from co-pyrolysis has the properties to improve the soil quality. *Process Safety and Environmental Protection*,149,185-198. https://doi.org/10.1016/j.psep.2020.10.051
- 26. Venna,S., * Sharma,H.B., * Reddy, P.H.P.,Chowdhury,S., and Dubey,B.K.,. (2021). Landfill leachate as an alternative moisture source for hydrothermal carbonization of municipal solid wastes to solid biofuels. *Bioresource Technology*, 320,124410. https://doi.org/10.1016/j.biortech.2020.124410
- 27. Chakraborty,I., *Bhowmick,G.D., *Nath,D., Khuman,C.N., Dubey,B.K., and Ghangrekar,M.M., (2021). Removal of sodium dodecyl sulphate from wastewater and its effect on anodic biofilm and performance of microbial fuel cell. *International Biodeterioration & Biodegradation*, 156,105108. https://doi.org/10.1016/j.ibiod.2020.105108
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- 53. Pokhrel, L. *, and Dubey, B., (2011). Assessment of Aquatic Toxicity of Metal Nanoparticles using MetPLATETM Bioassay as a Rapid Screening Tool, Paper presented at Appalachian Student Research Forum, Johnson City, TN, March 24, 2011.
- 54. Silva, T. *, and Dubey, B., (2011). An Estimation of Contribution of Biodegradable Plastics to Global Methane Production, Poster presented at Appalachian Student Research Forum, Johnson City, TN, March 24, 2011.
- 55. Pokhrel, L. *, and Dubey, B., (2011). Nanoecotoxicology and Human Health: Where Do We Stand?, Poster presented at Appalachian Student Research Forum, Johnson City, TN, March 24, 2011.
- 56. Silva, T. *, and Dubey, B., (2011). Potential Contribution of Biodegradable Plastics to Global Methane Production, Paper presented at 2011 East Tennessee Environmental Conference, Kingsport, Tennessee, March 15-16, 2011.
- 57. Sinhababu, K., and Dubey, B., (2010). Performance Evaluation of Infiltration and Filtration Storm water Management Practices, Paper presented at the Unban Drainage, Sewerage and Irrigation Conference, Muscat, Oman, September 26-27, 2010.
- 58. Dubey, B. (2010). Economic Issues of Recycling of Solid Waste Components, Oral presentation made at Tennessee Pollution Prevention Partnership Conference (TP3), Montgomery Bell State Park, Burns, Nashville, TN, September 23-24, 2010.
- 59. Pokhrel, L.[#] and Dubey, B. (2010). Investigation of Fate and Transport of Silver Nanoparticle in Waste Disposal Systems Poster presented at 2010 Appalachian Student Research Forum, Johnson City, TN, April 6-8, 2010
- 60. Silva, T.* and Dubey, B. (2010). Environmental Concerns of Nanoparticles in Wastewater Treatment Plant A Review Poster presented at 2010 Appalachian Student Research Forum, Johnson City, TN, April 6-8, 2010
- 61. Holley, A.*, Boggan, J.*, Bannister, J.*, Reynolds, H.*, Panganiban, J.*, Hammond, L.* and Dubey, B. (2010). Biological and Chemical Analysis of Water Samples collected over a Period of One Year from Brush Creek, Johnson City, TN, Part-1; Poster presented at 2010 Appalachian Student Research Forum, Johnson City, TN, April 6-8, 2010
- 62. Jarratt, T.*, Justus, K.*, Rogers, B.*, Woody, J.*, Fleetwood, F.*, Hammond, L.* and Dubey, B. (2010). Biological and Chemical Analysis of Water Samples collected over a Period of One Year from Brush Creek, Johnson City, TN, Part-2; Poster presented at 2010 Appalachian Student Research Forum, Johnson City, TN, April 6-8, 2010
- 63. Dubey, B. (2010). Environmental Risk Assessment of Emerging Waste Materials: Issues and Challenges, Presented at Tennessee Department of Environment and Conservation 39th Annual Solid Waste Conference, Gatlinburg, Tennessee, April 28-30, 2010

- 64. Dubey, B and Singhal, N. (2010). Evaluation of Test Methods for Assessing the Environmental Risks from Road Marking Glass Beads, Presented at 2010 American Chemical Society Annual Meeting in San Francisco, California, Division of Environmental Chemistry, Session of Sustainable Waste Management: Issues and Challenges, March 21-25, 2010.
- 65. Dubey, B. (2010). Environmental Risk Assessment for Beneficial Reuse and Disposal Options of Waste Materials: Issues and Challenges, Presented at 2010 East Tennessee Environmental Conference, Kingsport, Tennessee, March 16-17, 2010.
- 66. Wang, Y.*, Dubey, B., Townsend, T., and Rhue, D. (2008). Laboratory Studies for Assessing Reductive Iron Dissolution in Landfill Soils, Poster Presented at SWANA Florida Sunshine Chapter Senior Managers Conference, St. Augustine, FL, Jan 21-23, 2008
- 67. Santra, S., Dubey, B., Patel, C., Kar, S., and Townsend, T. (2007). Preliminary Study to Assess Fate and Transport of Different Manufactured Nanoparticles (MNPs) in Different Soil Matrix, Presented at 2007 Florida Section ACS meeting (FAME 2007) at Orlando, Florida, USA.
- 68. Misra, A.*, Dubey, B., Wu, C., Townsend, T., and Solo-Gabriele, H. (2005). Controlling Heavy Metal Emission and Leaching in Combustion Environments by using Sorbent Technology during Disposal of Chromated Copper Arsenate (CCA) Treated Wood, Paper presented at 2005 Florida Section A&WMA Annual Conference at St. Pete Beach, Florida, USA, Oct 23-25, 2005.
- 69. Misra, A.*, Dubey, B., Wu, C., Townsend, T., and Solo-Gabriele, H. (2005). Use of mineral Sorbents to Control the Emission and Leaching of Arsenic, Chromium and Copper during the Disposal of CCA Treated Wood, Paper presented at International Symposium on the Role of Adsorbed Films and Particulate Systems in Nano and Biotechnologies at Gainesville, Florida, USA, Aug 24-26, 2005.
- 70. Misra, A.*, Dubey, B., Wu, C., Townsend, T., and Solo-Gabriele, H. (2005). Evaluating the use of sorbent technology in thermal processes for disposal of Chromated Copper Arsenate (CCA) treated wood in combustion facilities, Paper presented at Florida 81st Annual Meeting and Exposition (FAME) 2005 organized by American Chemical Society (ACS) Florida Section at Orlando, Florida, USA, May 5-7, 2005.
- 71. Dubey, B., Jacobi, G., Townsend, T., and Solo-Gabriele, H. (2005). CCA-Treated Wood in Consumer Mulches: Tools to Minimize Contamination, Proceedings 2005, Special Waste Symposium, Solid Waste Association of North America (SWANA), West Palm Beach, Florida, Feb 7-10, 2005.
- 72. Dubey, B., Townsend, T. (2005). Arsenic and Lead Leaching from the Waste Derived Fertilizer IroniteTM, Poster Presented at Florida Department of Environmental Protection Solid Waste Workshop 2004-2005, Cocoa Beach, Feb 15-17, 2005. This poster was also presented at 7th Annual Environmental Engineering Sciences Poster Symposium, April 12th 2005.
- 73. Dubey, B., Sylvie, M.*, Townsend, T. (2005). Comparing Arsenic Leachability in TCLP with Other Leaching Procedures, Poster Presented at Florida Department of Environmental Protection Solid Waste Workshop 2004-2005, Cocoa Beach, Feb 15-17, 2005. This poster was also presented at 7th Annual Environmental Engineering Sciences Poster Symposium, April 12th 2005. Received third prize in graduate category.
- 74. Misra, A.*, Dubey, B., Wu, C.Y., Townsend, T., and Solo-Gabriele, H. (2005). Use of Sorbent Technology to Prevent Leaching of Heavy Metals (As, Cr, Cu) and Their Application to Disposal of CCA Treated Wood in Combustion Systems, Poster presented at 7th Annual Environmental Engineering Sciences Poster Symposium, April 12th 2005.

- 75. Spalvins, E., Dubey, B., Sylvie, M. *, Townsend, T. (2005). Simulated Landfill Lysimeters to Asses the Leaching of Metals from Potentially Hazardous Wastes, Poster Presented at Florida Department of Environmental Protection Solid Waste Workshop 2004-2005, Cocoa Beach, Feb 15-17, 2005. This poster was also presented at 7th Annual Environmental Engineering Sciences Poster Symposium, April 12th 2005. Received first prize in graduate category.
- 76. Dubey, B., Townsend, T. and Solo-Gabriele, H. (2004). Leaching of Preservatives from Pressure-treated wood in sanitary landfills, Received 2nd Prize at UF AWMA 6th Annual Environmental Poster Symposium, April 15, 2004.
- 77. Jacobi, G., Solo-Gabriele, H., Townsend, T., Dubey, B. and Lugo, L. (2004). Extent of CCA-Treated Wood in Consumer Mulches. International Conference on Environmental Impact of Preservative-Treated Wood; Orlando, February 8 11, 2004. This poster was also presented at the NIEHS-MFBS Center/Arch Program Science Symposium held in Miami, FL on March 18, 2004.
- 78. Dubey, B., Townsend, T. and Solo-Gabriele, H. (2004). Leaching of Copper, Chromium and Arsenic from CCA-treated wood in sanitary landfill leachate, International Conference on Environmental Impact of Preservative-Treated Wood; Orlando, February 8 11, 2004.
- 79. Dubey, B., Townsend, T. and Garret, K. (2003). Leaching of Milled Asphalt Pavement Amended with Waste to Energy Ash, Poster Presented at 2003 Annual Conference of Florida Section Air and Waste Management Sept 7-9, 2003, Orlando USA.

Invited Presentations/Seminars

- Invited to deliver seminar on "Development of a Sustainable Waste Management Infrastructure - Global Issues and Challenges", delivered on 10th August, 2018 as part of Departmental Friday Seminar Series at Department of Civil Engineering, Monash University, Melbourne, Australia.
- 2. Invited to deliver seminar on "Smart Resource Management for Sustainable Urbanization: Development of a Scientific Waste Management Infrastructure", delivered on 3rd August as part of Departmental Seminar Series at Department of Infrastructure Engineering, The University of Melbourne, Melbourne, Australia.
- 3. Invited to present on "Waste/Resource Management-Challenges, Barriers and Strategies Experience from Canada", delivered as part of Global Leadership Program on Circular Economy Preparing Leaders for the Transformation to a Circular Economy, 17th -23rd June, 2018, Adelaide, Australia organized by Green Industries SA in partnership with Ekonnect Knowledge Foundation and Environmental Management Centre LLP and Circular Economy Alliance Australia..
- 4. Invited to deliver seminar on "Waste Management Issues for Developing Countries Experience from India", delivered on 2nd Aug 2018 at Department of Engineering, La Trobe University, Melbourne, Australia.
- 5. Invited to deliver seminar on "Sustainable Waste Management Plan for Kolkata", delivered on 25th April 2018 as part of Training program on "Industrial Pollution Management –Compliance & Enforcement practices in Sweden", 24th to 26th April, 2018; at The Gateway Hotel, EM Bypass Kolkata, Organized by West Bengal Pollution Control Board, India and Swedish Environmental Protection Agency.
- 6. Invited to give lecture on "Life Cycle Analysis as a Tool for Sustainable Engineering", as part of QIP Short Term Course on Sustainability Issues in Civil Engineering, at Indian Institute of Science, Bangalore, India, 7th to 11th May, 2018.
- 7. Invited to give lecture on "Mathematical Methods/Intro Modeling in Environmental

- Engineering", as part of AICTE QIP course on Mathematical Methods in Civil Engineering, at Indian Institute of Technology Kharagpur, 19th to 23rd Feb, 2018.
- 8. Invited to give lecture on "Intro to Environmental Modeling", as part of AICTE-QIP Short Term Course on Advanced Computing Tools in Civil Engineering, at Indian Institute of Technology Kharagpur, 5th to 9th Mar, 2018.
- 9. Invited to deliver "Science Lecture Series" on Waste Management for Sustainable Urbanization, delivered on 17th Nov 2017 at the Consulate General of the Federal Republic of Germany, Kolkata, India
- 10. Invited to present on "Waste Management Issues for Smart Cities" at the Smart Cities Workshop –Sustainable Urban Development, Organized by Heidelberg University, Germany ORF, SPA and BayIND In Collaboration with Xavier University Bhubaneswar and Indo-German Chamber of Commerce, at Hotel Mayfair Lagoon, Bhubaneswar, September 21-22, 2017
- 11. Invited as a Chief Guest for Engineers Day function at MVGR College of Engineering (Autonomous), Vizianagaram, Andhra Pradesh, delivered two invited lectures on "Waste Management Challenges for Urban India" and on "Research Initiatives that Country needs in Environmental Field", Sept 15th 2017
- 12. Invited Research Seminar at Annual Technical Meet of IIChE Students' Chapter of Chemical Engineering Department, Jadavpur University (INNOVA 2016) on "Use of Life Cycle Analysis as a Decision Tool in Environmental Engineering" Organized by Indian Institute of Chemical Engineers Students' Chapter of Chemical Engineering Department, Jadavpur University, April 7th 2016.
- 13. Invited Research Seminar at World Environment Day Program at Indian Institute of Technology Kharagpur on "Challenges for Municipal Solid Waste Management in India", Organized by Institution of Engineers India and School of Environmental Science and Engineering, June 5th, 2015.
- 14. Invited Research Seminar at Centre for Environmental Science and Engineering, Indian Institute of Technology Bombay, Mumbai, India on "Solid Waste Management Issues and Challenges: A Summary of Research Efforts with a Case Study of E-Waste Management Issues" April 4, 2014.
- 15. Invited Lecture at Amritapuri Center for Sustainable Future, Amritapuri Campus, Amrita Vishwa Vidyapeetham University, Clappana, Kollam, Kerala, India on "Basics of Environmental Control and Associated Technologies", March 19th, 2014.
- 16. Invited Seminar at Mata Amritanandamayi Math, Amritapuri, Kollam, Kerala, India on "Latest Global Trends in Water and Waste Problems", March 20th, 2014.
- 17. Invited Lecture at Amrita School of Engineering, Amrita University, Ettimadai, Coimbatore, India on "The Hazardous Waste Perspective", March 27th, 2014.
- 18. Invited Online Seminar Telecasted Live to Several (more than 20 campuses) University Campuses in India, Lecture at Amrita University, Ettimadai, Coimbatore, India on "Environmental Sustainability Issues with a Focus on How to Make Efforts to Have a Greener Campus", March 28th, 2014.
- 19. Invited Lecture at School of Business, Amrita University, Ettimadai, Coimbatore, India on "Waste Management as an Industry: Opportunities and Challenges for Innovation and Entrepreneurship" March 28th, 2014.
- 20. Invited Research Colloquium Seminar Presentation at Golisano Institute for Sustainability, Rochester Institute of Technology, NY, USA on "Overview of Electronic Waste Management Issues Challenges and Opportunities" Oct 16th 2013.
- 21. Invited Presentation at the Perkin Elmer Inspiring INnovation Tour, Toronto, ON, on "Silver Nanoparticles Toxicity and the Role of Water Chemistry and Organic Ligands" April 4, 2013.

- 22. Invited Seminar Presentation at School of Earth, Biological and Environmental Science, Central University of Bihar, Patna, India on "Understanding the Role of Water Chemistry and Organic Ligands on the Nanoparticle Toxicity in Environment", May 3rd 2013.
- 23. Invited Seminar Presentation at Central Building Research Institute (CBRI), Roorkee, India, on "A Waste Management Oriented Life Cycle Perspective of Sustainable Building Material Selection", April 29th 2013.
- 24. Invited Seminar Presentation at Earth and Environmental Division, Indian Institute of Science, Bangalore, on "Environmental Nanotoxicology Issues of Engineered Nanomaterials: Summary of Recent Research Efforts", August 13th 2012.
- 25. Invited Seminar Presentation at Indo-German Center for Sustainability, Indian Institute of Technology, Madras; in Chennai, on "Sustainable Resource Management: Issues and Challenges", August 9th2012.
- 26. Invited Seminar Presentation at Indian Institute of Technology, Kharagpur, on "Solid Waste Management Issues and Challenges: A Summary with a Case Study of E-Waste Management Issues", Organized by Society of Civil Engineering and Infrastructure, August 3rd2012.
- 27. Invited Seminar Presentation at Department of Civil Engineering, Indian Institute of Technology, Delhi, on "Environmental Nanotoxicology: Summary of Recent Research Efforts with Nanosilver and Other Example Nanoparticles," July 10th2012.
- 28. Invited Seminar Presentation at Indian Institute of Technology, Gandhinagar, on "Solid Waste Management Issues and Challenges: A Summary of Research Efforts with a Case Study of E-Waste Management Issues," June 19th 2012.
- 29. Invited Seminar Presentation at College of Public Health, Department of Preventive Medicine and Environmental Health, University of Kentucky, Lexington on "Assessing Environmental Risks from Emerging Waste Streams: Tools, Issues and Challenges" May 31, 2011
- 30. Invited Platform Presentation as part of ASCE Community Outreach on "Liquid Assets" Our Water Infrastructure. Presentation was focused on "Water Quality and Public Health Issues", April 20th 2011 at Johnson City, TN and May 26th 2011 at Bristol, VA.
- 31. Invited Seminar Presentation at Department of Civil Engineering, Kansas State University, Manhattan on "Simulated Landfills for Assessing the Leachate Quality Impacts from Co-Disposal of Electronic Waste" May 2, 2011.
- **32.** Invited Seminar Presentation at College of Public Health, Division of Environmental Health Sciences, University of Massachusetts, Amherst on "Application of Environmental Engineering Tools in Environmental Public Health Issues: A Summary of Research Results" March 7, 2011.
- **33.** Invited Seminar Presentation at College of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India on "Waste Management; Issues and Challenges in Assessing Beneficial Reuse and Disposal Options for Waste Materials" June 22, 2010.
- **34.** Invited Earth Day Seminar Presentation at Colonial Hill Retirement Center, Johnson City, Tennessee on "Solid Waste Management: Current Status of Sustainable Initiatives by Waste Industry" April 22, 2010.
- **35.** Invited Seminar Presentation at the Department of Civil and Environmental Engineering, University of Southern California (USC, Los Angeles) on "Impact of Surface Water Conditions on Preservative Leaching and Aquatic Toxicity from Treated Wood Products", February 6, 2009.
- **36.** Invited Seminar Presentation at Division of Environmental Engineering and Science, National University of Singapore (NUS) on "Environmental Risks of Emerging Waste Streams", November 20, 2008.

- **37.** Invited Seminar Presentation at AWRA Florida Chapter Meeting on Iron Research, April 14th, 2008.
- **38.** Invited Seminar Presentation at Department of Civil and Environmental Engineering, University of Auckland on "Simulated Landfills for Assessing the Leachate Quality Impacts from Co-Disposal of Hazardous Constituents" October 8, 2007.
- **39.** Invited Seminar Presentation at the Department of Civil Engineering, Indian Institute of Science, Bangalore on "Comparison of Environmental Impact of Wood Treated with Chromated Copper Arsenate (CCA) and Three Different Arsenic Free Preservatives", November 2006.
- **40.** Invited Lecture Presentation on "Disposal Issues related to Pressure Treated Wood" to a class comprising high school students and teachers from various Gainesville, Florida schools; as a part of 2005, Summer Environmental Enrichment Program funded by NSF, July 15, 2005.
- **41.** Invited Seminar Presentation at Department of Civil Engineering, Indian Institute of Technology (IIT), New Delhi, India on "Leaching Tests: A Tool for Risk Assessment in Solid Waste Management"; on April 20th, 2005.
- **42.** Invited Presentation on "Disposal Issues for Preservative Treated Wood" at the Division of Cellulose Material, American chemical society (ACS) national 2005 spring meeting 2005, San Diego, California March 13-17, 2005.
- **43.** Invited Seminar Presentation at Department of Civil Engineering, Indian Institute of Technology (IIT), New Delhi, India on "Solid Waste Management: A US Perspective"; on Feb 13th, 2004.

Technical Reports

- 1. Dubey B. (2014). Life Cycle Analysis of Energy of Waste (EfW) facility proposed for Peel Region as part of Integrated Waste Management Plan-A preliminary study report, Submitted to Regional Municipality of Peel, Brampton, Ontario, Canada June 2014.
- 2. Kumar, D., Hait, S., and Dubey B., (2013). Occurrence, Fate and Removal of Emerging Contaminants in Surface Water, Project Report, Institutional Research Collaboration Development Grant, Submitted to Indo-Canadian Shastri Institute, Calgary Canada
- 3. Dubey, B., Fassman, E., (2009). "Performance Evaluation of Infiltration and Filtration Stormwater Management Practices." Prepared by University of Auckland (Auckland UniServices Ltd.) for Auckland Regional Council, Auckland, New Zealand.
- 4. Singhal, N., Dubey, B., Johnson, A., Swift, S., (2009). "Estrogenic Endocrine Disrupting Compounds A Review of their Presence and Fate in Water and Sediments in New Zealand", Prepared by University of Auckland (Auckland UniServices Ltd.) for Auckland Regional Council, Auckland, New Zealand.
- 5. Dubey, B., Singhal, N., (2009). "Evaluation of Test Methods for Assessing the Environmental Risks from Road Marking Glass Beads", Final Report, Submitted to Britesite (NZ) Limited, Ramarama, New Zealand.
- 6. Dubey, B., (2009). "Background Information to Assist Preparation of a Proposal to Set up and operate a Plasma Co-generation Plant in New Zealand to Burn Waste to Produce Energy" Final Report, Submitted to A-ward Attachments Limited, Auckland, New Zealand.
- 7. Townsend, T., Dubey, B.,Ko, J., Kim, H., Cho, Y., (2008). "Landfilled Municipal Waste Characteristics in World Regions", Final Technical Report". Submitted to the *Caterpillar Inc.* Peoria, IL.
- 8. Rhue, R., Townsend, T., Dubey, B., Wang, Y., (2008). "Soils underneath Florida Landfills and their Role in the Occurrence and Fate of Iron and Arsenic in Groundwater, Final Technical Report". Submitted to the *Hinkley Center for Solid and Hazardous Waste*

- Management, Gainesville, FL.
- 9. Townsend, T., Singh S, Dubey, B., (2007) "Research and Data Report for the Alachua County Southwest Landfill." Submitted to Alachua County Public Works Department, Alachua County, Florida.
- 10. Dubey, B., Townsend, T., (2007). "Biomass Resources Assessment Part II: Availability and Cost Analysis of Using Municipal Solid Waste Components as Alternative Fuel Sources for Power Generation, Final Technical Report". Submitted to *Gainesville Regional Utilities*, *Gainesville*, FL.
- 11. Dubey, B., Townsend, T., (2007). "Assessing Fate of Arsenic during the Management of Diseased Animal Wastes, Set of Notes". Submitted to *Sandra Cointreau*, *Solid Waste Management Advisor*, World Bank, Washington DC.
- 12. Townsend, T., Dubey, B., Cochran, K., Henry, S., (2007). "Government Policies for Encouraging Recycling of Construction and Demolition Debris" Submitted to *Clay County Solid Waste Division, Clay County*, Florida, USA.
- 13. Townsend, T., Dubey, B., Kim, H., Nepal, S., Laux, S., (2007). "Evaluation of Leachate Recirculation and Gas Collection Systems for Highlands County Landfill" Submitted to *Department of Solid Waste Management, Highlands County*, Florida, USA.
- 14. Townsend, T., Xu, Q, Dubey, B., Cochran, K., Jordan, A., (2007). "Research Advancing the Management of Construction and Demolition Debris in Florida, Final Technical Report". Submitted to the *Hinkley Center for Solid and Hazardous Waste Management, Gainesville*, FL.
- 15. Townsend, T., Xu, Q, Dubey, B., Abichou, T., (2007). "Use of Waste Materials to Reduce Emissions of Hydrogen Sulfide from Landfills to Attenuate Odors, Final Technical Report". Submitted to the *Hinkley Center for Solid and Hazardous Waste Management, Gainesville*, FL
- 16. Reinhart, D., Townsend, T., Dubey, B., Kim, H., Bonilla, V., Xu, Q., (2006). "Design and Operational Issues Related to Co-disposal of Sludges and Biosolids in Class-I Landfills, Final Technical Report (Phase-III)". Submitted to the *Hinkley Center for Solid and Hazardous Waste Management, Gainesville*, FL.
- 17. Solo-Gabriele, H., Townsend, T., Jacobi, G, Dubey, B., Eduardo, L., (2006). "Augmented Sorting of Recovered Wood Waste using Stain and X-ray technologies, Technical Report". Submitted to the *Florida Department of Environmental Protection, Tallahassee*, FL.
- 18. Solo-Gabriele, H., Townsend, T., Jacobi, G, Shibata, T., Dubey, B., (2005). "CCA-Treated Wood in Commercial Landscaping Mulch and Effects of Colorant on Metal Leaching Rates, Technical Report #0332003-05". Submitted to the *Florida Center for Solid and Hazardous Waste Management*, Gainesville, FL.
- 19. Solo-Gabriele, H., Townsend, T., Durbin, M., Jacobi, G, Dubey, B., (2005). "Educational Outreach and Stain Distribution Project for Identifying Copper-Treated Wood, Technical Report #0232003-05". Submitted to the *Florida Center for Solid and Hazardous Waste Management*, Gainesville, FL.
- 20. Townsend, T., Mutha, S., Ko, J., Pearson, B., Spalvins, E. and Dubey, B. (2004) "PBDE Flame Retardants in Florida: Import, Fate and Environmental Implications" Submitted to United States Environmental Protection Agency
- 21. Solo-Gabriele, H., Townsend, T., Khan, B., Song, J-K, Jambeck, J., Dubey, B., Jang, Y-C, (2003). "Arsenic and Chromium Speciation of Leachates from CCA-Treated Wood, Technical Report #03-07". Submitted to the *Florida Center for Solid and Hazardous Waste Management*, Gainesville, FL.
- 22. Solo-Gabriele, H., Townsend, T., Sakura, D., Dubey, B., Jambeck, J., (2002). "Quantities of Arsenic within the State of Florida, Technical Report #03-06." Submitted to the

Other Studies/Reports

- 1. Experimental Investigation of Change in Solution pH within Concrete Pipes, Data report submitted to Water Care, Auckland, New Zealand, July 2009.
- 2. Municipal Solid Waste Treatment Using Thermal Technologies Summary of Current Trends and Issues, Submitted to Citrus County Solid Waste Management Division, Lecanto, Florida, 2007.
- 3. Evaluation of Groundwater Issues for the Section 7 Lined Landfill Unit at the Hillsborough County Southeast Landfill, Report submitted to Jones Edmunds and Associates Inc., Gainesville, Florida, January 2006.
- 4. Analysis of Surface Coating Samples on Structures Scheduled for Demolition at the Kennedy Space Center, Report submitted to Jones Edmunds and Associates Inc., Gainesville, Florida, May 2004.
- 5. Comparison of Arsenic Concentrations in Recovered Screened Material and Soil Measured Using two Different Methodologies: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES) and Graphite Furnace Atomic Absorption Spectroscopy (GF-AAS), Report submitted to Sun Recycling, Dania Beach, Florida, August 2004.
- 6. Leaching of Milled Asphalt Pavement Amended with Waste to Energy Ash, Report submitted to Recyclable 100, Inc., Leesburg, FL 34749-0180, March 2003.
- 7. Data Report on RCRA Metal Analysis on Contaminated Soil Samples from Ft. Ord, CA, submitted to Concurrent Technologies Corporation, Largo, Florida, March 2003.
- 8. Leachability of Printed Wire Boards Containing Leaded and Lead-Free Solder, Report submitted to Abt Associates Inc. Cambridge, MA, August 2003.

Research Grants:

Applied for several research grants over last 10 years with a mix bag of success and failure. Below is a list of research grants which were <u>successful applications</u>.

Ongoing Projects

- 1. International Transport Forum (ITF) Organisation for Economic Cooperation and Development (OECD), Paris, France; Development of Framework for Decarbonization of Transport Sector in India (PI), Budget: 29015 Euros
- 2. Alliance to End Plastic Waste and Circular Initiative, Singapore: Closing the Data Gap Challenge Study of Plastic Pollution and Mitigation Measures in a Coastal City in India, (PI), Budget: 49500 (USD)
- 3. Department of Science and Technology, Govt of India as part of Indo-EU Horizon 2020 Project: Identifying Best Available Technologies for Decentralized Wastewater Treatment and Resource Recovery in Indian Context, (Co-PI), Budget: INR 93800000.
- 4. Aditya Choubey Centre for Re-Water Research focussed on Resource Recovery from Wastewater, Capillary Technologies, Co-PI, Budget: INR 20,000,000
- 5. Development of Indigenous Low-cost Soil and Sawdust Based Water Filters for Water Treatment and its Demonstration in Selected NSS Adopted Villages, IIT Kharagpur Student Challenge Grant, Co-PI, Budget: 10,00,000

Completed Projects

- 6. Advanced Materials Research Consortium, Canadian Foundation for Innovation, Budget Amount: CAD \$998,959, (Co-PI, 33% focused on recovery of materials from waste streams)
- 7. An Innovative Green Technology for Treating Municipal and Industrial Wastewater entering Rivers and Streams, Budget Amount: CAD 400,000 from IC-Impacts, Canada for

- Canadian Partners, CAD 399,000 (Indian Rupees: 2,000,000) from Department of Biotechnology, India (Co-PI)
- 8. Energy from Waste Project, Peel Energy Recovery Centre Long Term Waste Disposal Study; Region of Peel, Budget: CAD \$12,000 (PI) Consultant for an Overall LCA Study.
- 9. Characterization and Management of Construction and Demolition Waste in Canada Foundation Document developed for Environment Canada; Kelleher Environmental, Toronto, Canada, CAD \$10,000 my fee Part of the Team as an Expert Consultant
- 10. Treatment of Vegetable Wash-Water to Permit Water Recycling, Canadian Water Network-NSERC, Budget: CAD \$136,800 (Co-PI)
- 11. Mine Waste Management Hutti Gold Mines Resource Recovery and Incorporation of Circular Economy Approaches in Mine Waste Management, Karnataka, India; PI, Budget: INR 50,00,000
- 12. Beneficial reuse risk assessment of waste materials including resource recovery, Innovative Research and Development Grant (MHRD), PI; Budget Amount: INR 25,24,000.
- 13. Study of Pollution Caused by Coal Based Thermal Power Plant (CBTPP) in Raigarh Region Chhattisgarh Environment Conservation Board, Co-PI; Budget Amount: INR 10,35,000
- 14. Pilot Demonstration Plant for Food Waste Resource Recovery A Circular Economy Approach, Department of Science and Technology (DST) Waste Management Program, PI, Budget: INR 1,95,00,000.
- 15. Technical Assistance to Guwahati Municipal Corporation on Design and Implementation of Integrated Waste Management Plan for the City (incorporating environmental risk assessment and life cycle concepts) as part of Clean India Mission, PI, Budget: INR 42,98,000
- 16. Techno Economic Feasibility Report for Setting up a Facility for Loading of Iron Ore Products, BKG, Haddinapade Iron Ore Mines, Co-PI, Budget: INR 28,32,000
- 17. Techno Economic Feasibility Study Report (TEFR) for setting up a facility for loading of iron ore products from a common take off point at the mines head in Ramgad range, Veerabhadrappa Sangappa and Company, Co-PI, Budget: INR 28,32,000
- 18. Fate and Transport of Binary Nanoparticles in a Sand Column, Science and Engineering Research Board (SERB), Co-PI, Budget: INR 19,20,000
- 19. Development of Indigenous Low-cost Soil and Sawdust Based Water Filters for Water Treatment and its Demonstration in Selected NSS Adopted Villages, IIT Kharagpur Student Challenge Grant, Co-PI, Budget: 10,00,000
- 20. Incorporating Sustainable Methods in Integrated Waste Management, Research Development Fund-UOG, Amount equivalent: CAD \$40,000 (PI)
- 21. Beneficial Reuse of Waste Wheat Straw Ash, URA-NSERC, Amount equivalent: CAD \$8,000 (PI)
- 22. Occurrence, Fate and Removal of Emerging Contaminants in Surface Water, Shastri Indo-Canadian Institute (Alberta), Budget Amount: CAD \$ 18,000 (PI)
- 23. Environmental Risk Assessment from Nanosilver, State of Tennessee-Faculty Development Fund, Budget Amount: US \$ 200,000 (\$100,000 as Laboratory Development and \$100,000 for PhD Student Support) (PI)
- 24. Development of an Approach to Assess the Impact of Agricultural Land Use Activities on Stream Water Quality Ontario Ministry of Environment, Budget: CAD \$50,000 (Co-PI).
- 25. International Expert: Municipal Solid Waste Management and Institutional Strengthening for Environmental Sustainability-Country Project Nigeria, Programme for Implementation of Green Industry for POPs Pollution Prevention and Reduction United Nations Industrial Development Organization (UNIDO) United Nations, USD \$ 25,000 (PI)

- 26. Undergraduate Research Experience Program, National Science Foundation, Budget: US \$4000 (PI)
- 27. Evaluation of Fate and Transport of Manufactured Nano materials in Different Soil Matrix: A preliminary Study Faculty Research Development Fund, Auckland New Zealand, Budget: NZD 50,000 (PI)
- 28. Pollutant Accumulation in Stormwater Treatment Practices, Auckland Regional Council, Budget: NZD 45,000 (PI)
- 29. Project Development to Setup and Operate a Plasma Cogeneration Plant in Auckland Region for Waste to Energy, A-Ward Attachments Limited, Auckland, New Zealand, Budget: NZD: 15,000 (PI)
- 30. Experimental Investigation of Change in Solution pH Within Concrete Pipes, Water Care Services Limited, Auckland, New Zealand; Budget: NZD 30,000 (PI)
- 31. Evaluating Risks of Heavy Metals in Beneficial Reuse of Waste Glass Beads Britesite New Zealand Limited, Ramarama, New Zealand, Budget: NZD 16,000 (PI)
- 32. Teaching CAPEX in Environmental Engineering Faculty of Engineering, University of Auckland, Budget: NZD 60,000 (Co-PI)
- 33. Current Environmental Topics Related to Construction and Demolition Debris in Florida, Florida Department of Environmental Protection, Budget: USD \$75,000 (Co-PI)
- 34. Technical and Economical Evaluation of Potential Use of Biomass as a Fuel Source for Power Plants, City of Gainesville, Budget: USD \$ 45,000 (Co-PI)
- 35. Optimization of Gas Collection System at the Highlands County Bioreactor Landfill, Department of Solid Waste Management, Highlands County, Sebring, Florida, Budget: USD 45,000 (Co-PI)
- 36. Assessing Fate of Arsenic during the Management of Diseased Animal Wastes, World Bank-Solid Waste Management Division, Budget: USD \$ 15,000 (Co-PI)

HQP Training

I have worked with several students as part of their PhD, Masters and UG (research) programs in addition to regular teaching activities. Here is a list of recently completed PhD students from my research group. In addition, presently I have 5 PhD students working in my group working on various projects listed above. More than 20 Masters Research students (including the present ones) have worked with me and so as nearly 40 UG students have got their research exposure working on various projects in our research lab. I enjoy working with these young researchers. In addition, I have served in several PhD thesis and external examiner for universities in Canada, Australia, Sweden, New Zealand and India.

Recently completed PhD projects from our research group

Name of PhD	Year of	PhD Thesis Title	Role
Student	Completion		
Hari Bhakta	2021	Valorisation of Organic Fraction of Municipal	Supervisor
Sharma		Solid Waste by Hydrothermal Carbonization as	
		a Solid Biofuel	
Cheela V	2021	Sustainability Assessment of Waste Treatment	Supervisor
Ravi Sankar		Technologies – An Indian Case Study	
Sagarika	2020	Pretreatment Strategies to Improve Biogas	Supervisor
Panigrahi		Yield from Lignocellulosic Biomass	
Indrajit	2021	Reinventing Tertiary Treatment of Sewage	Joint Supervisor
Chakraborty		using Biochar with a Focus on Removal of	
		Complex Organic Compounds and	
		Disinfection to Facilitate Safe Reuse	

Amit K	2021	Resource Recovery and Sustainability	Supervisor
Jaglan		Assessment of Residential University Waste	
		Systems	
Pubali	2021	Analysis and Modeling of Organics and	Joint Supervisor
Mandal		Ammonia Removal from Landfill Leachate by	
		Electro-Oxidation	
Lok R	2013	Evaluation of Colloidal Stability and	Supervisor
Pokhrel		Ecotoxicity of Metal-based Nanoparticles in	
		the Aquatic and Terrestrial Systems	