EDITORIAL

Innovations in environmental bioprocesses for sustainable development

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The rapid growth of population, urbanization and climate change is causing serious threat to the future of human societies and the ecosystem. Technological innovation is the function through which new technologies are introduced into the society. In this line of progressive research, the special issue contains 26 articles selected from the "Biotechnological Research and Innovation for Sustainable Development" (BioSD-2018) conference that was held during November 22–25, 2018, at the CSIR-Indian Institute for Chemical Technology (IICT), Hyderabad, and the "Bio-Innovation for Environmental and Health Sustainable Developments" (BEHSD-2018) held from November 27-28, 2018, at the CSIR-Indian Institute of Toxicology Research, Lucknow. These two conferences were conducted in association with The Biotech Research Society, India (BRSI) and the International Bioprocessing Association - An International Forum on Industrial Bioprocesses (IBA-IFIBiop). These conferences focused the advancement of research and innovations on interdisciplinary topics in the domains of health, environment, food, water and energy which have been highly pertinent to realize sustainable development goals. The conference also aimed to address the current challenges in creating a sustainable and affordable ecosystem in the framework of cutting edge R&D interventions. A total of \sim 1000 participants attended both the conferences from all over the world.

The special issue covers the various advancement of research and innovations in the field of environmental biotechnology, particularly for resource recovery of waste and the treatment of liquid and solid wastes. These fields are highly pertinent to realize the sustainable development goals. The guest editors of this special issue are thankful to the Editor-in-Chief of Environmental Science and Pollution Research (ESPR), Professor Philippe Garrigues, for providing an opportunity to publish selected peer-reviewed papers that were presented at BioSD-2018 and BEHSD-2018. Our special thanks to Ms. Fanny Creusot and Ms. Florence Delavaud, Editorial Assistants of ESPR, and the entire production team at Springer for their valuable support in bringing out this issue successfully. We also thank all the reviewers for providing critical reviews, comments and feedback on manuscripts that were submitted for this thematic special issue. We firmly believe that you will enjoy reading the manuscripts presented in this special issue and also share the issue with your research colleagues.

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Dr. Thallada Bhaskar, FRSC, FBRS, FTAS, FISEES, FIBA, Senior Principal Scientist, is currently heading the Material Resource Efficiency Division (MRED) at the CSIR-Indian Institute of Petroleum, Dehradun, India. He carried out postdoctoral research and worked as an Assistant Professor at the Okayama University, Okayama, Japan. His research experience and expertise is in heterogeneous catalysis, thermo-chemical conversion of biomass, waste plastics

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biofuels and chemicals, waste to wealth and energy, industrial enzymes, etc. Professor Pandey is an Adjunct/Visiting Professor/Scientist in universities in France, Brazil, Canada, China, Korea, South Africa, Switzerland, and also in several universities in India. He has ~1375 publications/communications, which include 16 patents, 83 books, ~ 700 papers and book chapters, etc. with *h*-index of 97 and >43,000 citations (Google scholar). Professor Pandey is the recipient of many national and international awards and honours, which include the Highest Cited Researcher (Top 1% in the world; Top 10 in India), Clarivate Analytics, Web of Science (2019); Yonsei Outstanding Scholar, Yonsei University, Seoul, Korea (2019); Highest Cited

Researcher (Top 1% in the world; Top 10 in India), Clarivate Analytics, Web of Science (2018); Life-Time Achievement Award from the Biotech Research Society, India (2018); Life-Time Achievement Award from Venus International Research Awards (2018), Most Outstanding Researcher Award from Career360 (2018); Life-Time Achievement Award from the International Society for Energy, Environment and Sustainability (2017); Academician of European Academy of Sciences and Arts, Austria (2015); Honorary Doctorate degree from Univesite Blaise Pascal, France (2007); Thomson Scientific India Citation Laureate Award, USA (2006); UNESCO Professor (2000), etc. He is fellow of various academies, which include Royal Society of Biology, UK (2016); International Society for Energy, Environment and Sustainability (2016); National Academy of Sciences, India (2012); Association of Microbiologists of India (2008); International Organization of Biotechnology and Bioengineering (2007); and the Biotech Research Society, India (2005). Professor Pandey is the Editorin-chief of Bioresource Technology (http://ees.elsevier.com/bite/), Honorary Executive Advisor of Journal of Energy and Environmental Sustainability (www.jees.in) and Subject Editor of Proceedings of National Academy of Sciences, India (https://www.springer.com/life+ sciences/journal/40011).