

Municipal Waste to Energy

Academic Seminar

About the Seminar:

Professor Ashok Pandey will discuss the aspects of municipal solid waste valorization towards hazardous material management and circular economy promotion, focusing on current and emerging thermochemical and biological technologies for the production of energy in different forms.

Date and Time:

Monday 14th August 2023, 10:30 am BST

Meeting location:

James Watt South Building: 427a Seminar Room

Host:

Dr Siming You (Siming.You@glasgow.ac.uk)

About the presenter:

Prof. Pandey is currently a Distinguished Scientist at the Centre for Innovation and Translational Research, CSIR-Indian Institute of Toxicology Research, India and Executive Director (Honorary) at the centre for Energy and Environmental Sustainability in India.

His major research and technological development interests are industrial & environmental biotechnology and energy biosciences, focusing on biomass to biofuels & chemicals, waste to wealth & energy, industrial enzymes etc. Prof. Pandey is and has been Adjunct/ Visiting Professor/Scientist in universities in Europe, Asia, North America and South America. He has approximately 1600 publications/ communications which include 16 patents, 108 books, 900 papers and book chapters with h index of 118 and 60,000 citations (Google scholar).

Prof. Pandey is Founder President of the Biotech Research Society, India, Founder & International Executive Coordinator of International Bioprocessing Association, France, Chairman of the International Society for Energy, Environment & Sustainability, Editor-in-chief of Bioresource Technology, Honorary Executive Advisor of (i) Journal of Energy and Environmental Sustainability, (ii) Journal of Systems Microbiology and Biomanufacturing: Subject Editor, Proceedings of National Academy of Sciences, India; Associate Editor, (i) Biologia – Section Cellular and Molecular Biology and (ii) Biotechnology Research and Innovation and editorial board member of several international and Indian journals.

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About Decentralised Water Technologies:

The Decentralised Water Technologies project will accelerate the delivery of decentralised water technologies by bringing the most up-to-date bioscience and energy engineering to bear. It will re-write emerging design rules for engineering biology to ensure that off-grid environmental biotechnologies can be configured with confidence. Bespoke microbial treatment communities will be evolved using a new suite of high-throughput synthetic-biology inspired, experimental platforms. For rural populations and UK Islands and in the developing world, from sub-urban Bangkok to the Amazon and Arctic Canada, we will develop site-specific off-grid integrated heat/water technologies. We will develop low-cost sensors, real-time monitoring and adaptive control for remote distributed water infrastructure. With water technology companies, we will analyse how suites of technologies can be configured and controlled to shape new models for decentralised provision. Scottish Water will invest significantly in co-creating rural demonstrators and a mobile technology-demonstration platform for sustainable communities and with Northumbrian, Welsh Water and other utilities and stakeholders we will build momentum for a radically new low-carbon decentralised future for the water industry Working with professional bodies and innovation centres we will create a global centre of excellence in off-grid water provision, with the drive and passion to deliver transformational change; helping to deliver 2050 net-zero carbon and Sustainable Development Goal 6.

Abstract:

The unbounded rapid growth of urban cluster and adaptation of ‘modern living styles’ have indeed brought comforts and luxury to the life, it also has led to generation of several environmental concerns, including, for example, generation of huge quantities of solid waste such as municipal solid waste (MSW). MSW is a serious environmental and health concern globally. While on one hand, it can cause serious threats to environment if not managed properly, it also is a challenge for resource recovery. However, there is a growing interest and research aiming its management not limited to just treatment, but as a potential resource for energy recover as well as other value-added products. Thus, waste treatment must not be seen any longer as an environmental challenge but a rich source for recovery of resources.

This needs to be addressed in all-inclusive mode, including socio-economic perspective. It is also necessary to adopt the principles of sustainable bio-based economy, which could provide further support for the advancement of waste-to-energy technologies and the understanding of their role in the future of MSW.



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