

Biochemical conversion of biomass: A sustainable approach of biorefinery

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(會議連: <https://ntucc.webex.com/webappng/sites/ntucc/dashboard/pmr/mini0119>)

About the Talk

Biorefinery has been considered as the sustainable alternative for petro-refinery. Modern biorefinery intends to utilize each fractions of biomass to be converted into cascades of products so as to add more value and enabling the whole process to become economically feasible. Though various routes are available for biomass conversions, biochemical path is the most interesting due to environmental concerns.

Enzymes have the most significant role in sustainable valorisation of biomass however, the challenges are associated with the production of efficient enzymes which are the biocatalysts capable of unravelling the structure of biomass. Cellulases bioprocess has been developed significantly to reduce the overall cost of cellulases, hence contributing to cost-effective bio-ethanol production process. This is the reason for existence of commercial plants for bioethanol production, however; still there are scope for further improvement in bioprocess for cellulase production and research is ongoing worldwide. Though commercial cellulases are available, it is highly required to have in-house cellulase production technology to be self-reliant. On-site and integrated cellulase production configuration is popular as it seems to be cost-effective. Advances in bioprocesses and challenges for cellulase production will be addressed.

Date/Time for the Talk

2 Dec 2021 Thursday 12:00 pm – 1:20 pm (50 min talk + 30 min Q&A)

About the Speaker

Dr Reeta Rani Singhania is currently Chief Scientist at Centre for Energy and Environmental Sustainability, India. She worked at CSIR-National Institute for Interdisciplinary Science and Technology, Trivandrum for PhD studies and obtained the degree in Biotechnology in 2011. During 2011-2012, she worked as post-doctoral fellow at University Blaise Pascal, Clermont-Ferrand, France and 2012-2017 at DBT-IOC Centre for Advanced Bioenergy Research, Faridabad as “DBT-Bioscience Energy Overseas Fellow”. Her major research interests are in Microbial & Enzyme Technology and Bioprocess Technology, with current focus on biofuels from lignocellulosic biomass. She has 16 patents, edited three books and published more than 120 research articles, book chapters and conference communications with more than 6900 citations and h index of 32 (Google scholar). She is the recipient of BRSI-Women scientist award 2020, DBT-Bioscience Energy Overseas fellowship in 2013, IFIBiop Young Scientist award in 2012, AU-CBT Excellence award of BRSI in 2008, Elsevier Best Paper award in 2007 and Most Cited Paper award from BITE, Elsevier for the year 2015. She has served as Guest Editor of various international journals for special issues and is an editorial board member of Bioresource Technology, Biofuel Research Journal and Journal of Energy and Environmental Sustainability. She is the Editor of Bioresource Technology Reports and Associate Editor of Heliyon Energy and Systems Microbiology and Biomanufacturing.