

Preface

New Horizons in Biotechnology – NHBT 2019

Relevance of Biotechnology for a sustainable living has increased over the past few decades by addressing the different domains including agriculture, food, health care, livestock management, energy, environment, climate change, waste management and a multitude of other areas. Today, the subject not only encompasses life sciences and engineering, but spans across most of the human activities, affecting and influencing every one. The subject is poised to tackle emerging challenges like rapidly spreading global pandemics by providing solutions in the form of vaccines or drugs, immune boosters and diagnostics. Green processes, renewable clean energy, super foods and nutraceuticals, biodegradable polymers and materials are but a few of the outcomes of development in this field. In wake of the rapid deterioration of land and water resources and environment catalysed by anthropogenic activities, urgent calls have to be made on addressing the issues of solid, liquid and chemical waste management, atmospheric pollution, and moving towards greener manufacturing processes and deriving energy through renewable routes for a sustainable development and improved quality of life. It may not be incorrect to say that the world needs to move towards a sustainable bio-economy for human race to persist on this planet.

“New Horizons in Biotechnology (NHBT)” are a series of international conferences organized by CSIR-National Institute of Interdisciplinary Science and Technology (CSIR-NIIST) and the Biotech Research Society, India (BRSI) with this theme in focus, where global challenges in multiple sectors are discussed and debated in the biotechnology context. The latest in this series –NHBT-2019, was held at Thiruvananthapuram, in the state of Kerala, India during November 20-24, 2019. The event had over 500 participants spanning 33 countries, where domain experts including scientists, engineers and business houses presented their latest research and developments through over 100 presentations and close to 300 posters. The conference also had mini-symposia on two of the currently most relevant topics of Biofuels and Biorefineries and Healthcare Biotechnology; the former discussing sustainable energy and bio-based economy, and the latter discussing emerging diseases and multidrug resistance, advanced molecular tools for diagnosis and treatment including advanced drug delivery vehicles and other topics. The conference was also unique in offering two workshops, and an Industry-Young Researcher Interactive session. One of the workshops offered the young participants an advanced guidance on scientific writing and the second, trained them on how to do rapid fire presentations. The Industry-Young Researcher Interactive Session was attended by leading Biotech companies of India, where their Officials/R&D heads interacted with participants providing insights on the Biotechnology R&D scenario of the country and the challenges, start up and employment opportunities in the domain. The conference was supported and actively participated by the international professional bodies –Elsevier (UK), CSIR-National Environmental Engineering Research Institute, Nagpur, International Bioprocessing Association: International Forum on Industrial Bioprocesses (IBA-IFIBIOP), International Organization for Biotechnology and Bioengineering (IOBB); Centre for Energy and Environmental Sustainability (CEES) India, MACFAST, Thiruvalla, India and Khanal Foundation, Nepal.

We are happy to present the NHBT-2019 special issue of Bioresource Technology which includes the core research communications discussed and deliberated in this conference. The papers which are 52 in number, were selected through a scientific peer review process, where experts valued their relevance and importance in the domains these papers addressed. Needless to say, these papers present important issues in sustainable development through bio-concepts, a core area of the journal. The papers are categorised into Biofuels and Biorefineries, Bioprocesses, Biomass and Feed Stock Utilization, Physiochemical and Thermochemical Processes for Biomass, Biological Waste Management, Clean water, and Microbial Processes. It also includes reviews on 2G Ethanol and developments in biopolymer production. We are sure, the readers would be treated to the most advanced developments in all these areas, which are critical for future developments and implementation.

We place on record our sincere thanks to all authors for their excellent contributions and for the cooperation extended throughout the entire process of publication, especially since the production process happened during the difficult times when the entire globe is affected by the COVID-19 pandemic. We also hope that this special issue would help researchers in updating their knowledge on the subjects addressed, and would be beneficial in their R&D efforts and furthering the knowhow towards tenable goals. We would like to thank Prof. Ashok Pandey, Editor-in-Chief of the journal, Dr **Adam Fraser**, Senior Publisher, **Ms Hannah Zhang**, **Associate Publishing Content Specialist**, **Mr. Leonard Daniel**, **Journal Manager** and the entire publishing team for their help and support in bringing out this special issue

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