

Preface

This special issue of ‘*Indian Journal of experimental Biology (IJEB)*’ includes manuscripts of some of the presentations at the International conference “*New Horizons in Biotechnology 2019*”, organized by CSIR-National Institute for Interdisciplinary Science and Technology and The Biotech Research Society, India (BRSI) during 20-24 November 2019 at Thiruvananthapuram, Kerala, India. It was a major event with the participation of a large number of active researchers from all over the world.

The NHBT-2019 was a forum that brought together scientists, engineers, researchers and other experts from all over the world to deliberate on global developments in the fields of Industrial Biotechnology, Medical Biotechnology, Energy Biosciences, Environmental Biotechnology and Food & Agriculture Biotechnology. The conference provided an opportunity for exchange of ideas and insights for scientists and scholars promoting quality research on the frontier areas of Biotechnology, and also served as a unique platform to the participants from industries and academic institutions to develop possible global networking among them and create a nucleus of interface research.

The articles presented at the NHBT-2019 conference have been brought out as a special issue in various journals, including the Indian Journal of Experimental Biology (IJEB). This IJEB special issue has eleven selective papers pertaining to its scope. A peer review group comprising experts from leading institutes and laboratories shortlisted and reviewed the articles critically as per the IJEB standards.

Papers covered in this special issue include broadly (i) Microbial & Enzyme Technology, which includes papers dealing with the Functional evaluation of exopolysaccharide (EPS) from *Pseudozyma* sp. NII 08165, which revealed that the *Pseudozyma* EPS could be used as a potential thickener, emulsifying agent or flocculating agent for diverse applications; Fumaric acid production from sugar cane trash hydrolysate using *Rhizopus oryzae*; Bioconversion of waste cooking oil for poly-3-hydroxybutyrate production indicated the potential of used cooking oil as carbon source for PHB production by *Bacillus cereus* MPTDC; Production of xylanase under submerged fermentation from *Bacillus firmus* HS11 isolated from Sikkim Himalayan region; (ii) Environmental Biotechnology, which includes papers dealing with biosorption of chromium (VI) using novel biosorbents from *Calotropis gigantean* (this weed plant showed big potential in bioabsorbing chromium metal onto the surface), Generation of electricity in a microbial fuel cell using iron oxide nanoparticles and Laccase mediated biotransformation of pyridine raffinose using mathematical models which showed ex-situ bioremediation approach opted for degrading pyridine raffinose using bacterial extracellular enzyme laccase. There is one review as well on ‘Zero liquid Discharge’ as a sustainable technology with comprehensive assessment of technology, challenges and perspectives; and (iii) Medical Biotechnology, comprising papers dealing with *In vitro* anticancer potential of *Anaphyllum wightii* demonstrated with Dalton’s lymphoma ascites cell lines and molecular docking studies of β -sitosterol; Efflux pumps and biofilm formation by MRSA and MSSA isolates; and Enhanced intracellular translocation and cytokine profiling of gold nanoparticles conjugated with human papilloma virus based (HPV-R9) cell-penetrating peptide in cancer cells. This study demonstrated that cell penetrating peptide could be used along with gold nanoparticles for therapeutics application for cure of disease.

We hope that this special issue will be a good reference material for Biological Science and Biotechnology researchers. We thank the authors for quality papers; and extend our appreciation to reviewers for evaluating the manuscripts protecting the standard of the journal. We thank Shri RS Jayasomu, Chief Scientist & Editor, IJEB and the Director, CSIR-NISCAIR, New Delhi for agreeing to bring out this special issue on time and also the CSIR-NISCAIR Print Production team for smooth execution of this publication.

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