
Bioremediation, bioenergy and stress biology, issue 2014

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Environmental problems are now perceived to be a complex issue. There is paradigm shift in the goods and services offered by the ecosystem which directly affect the very survival of human being on this planet. There is urgent need for deep understanding of the nature and natural ecosystems. The deteriorating quality of environment as a whole has jeopardized the life and made the planet unsafe for all living creatures. Effective management of current environmental issues and problems is not in place despite the manifold advancement in the field of science and technology. Sometimes, a proper understanding of the nature of environmental problem is also lacking. In view of these, a three day International Conference on “Environmental Technology & Sustainable Development : Challenges and Remedies” was successfully organized by the Department of Environmental Science at Babasaheb Bhimrao Ambedkar University, Lucknow (India) during February 21-23, 2014. An unexpected, diverse and remarkable presence of committed researchers from various parts of the world made the event very informative and successful. Overwhelming response and grand success of the conference led us to collect the contributions and put the proceedings together for publication as a special issue of the scientific journal “Cellular and Molecular Biology”. In this special issue of Cellular and Molecular Biology, we present some selected peer reviewed research articles discussed in the conference.

The first paper of this special issue by Singh and Singh focuses on a noble strategy to produce edible mushroom with enhanced yield and nutrition through bioremediation of vegetable and agrowastes. The second paper by Vishnoi and Singh reports the mechanism of arsenic tolerance in the isolated bacterial strains mediated by bacterial Oxido-reductase enzyme system. The third paper by Srivastava et. al. describes the decolorization of dyes and improved production of ligninolytic enzymes from *Pleurotus*, using basidiospore derived monokaryons. The fourth paper of Kumari et al. highlights the enzyme mediated biodegradation of PAH (pyrene and phenanthrene) by bacterial consortium and role of biosurfactants. The fifth paper by Pandey

and Singh also highlights the biodegradation of wheat straw by *Pleurotus ostreatus*. The sixth paper of Pathak et al. discusses phycoremediation of textile wastewater by using unicellular microalga *Chlorella pyrenoidosa*. The seventh paper by Pandey et. al. demonstrates the enhanced production of ligninolytic enzymes by white rot fungi grown on lignocellulosic wastes using novel pretreatments. The eighth paper by Ayaz and Gonthalwal stresses on the role of environmental factors on bacterial quorum sensing. The ninth paper of Singh et. al. depicts alterations in lipid and fatty acid profile of the cyanobacterium *Scytonema geitleri* Bharadwaja under dehydration or Water stress. The tenth paper by Singh et. al. illustrates the production of cellulolytic enzymes by *Pleurotus* species on lignocellulosic wastes using novel pretreatments. The eleventh paper by Chandra and Singh presents removal of Cr (VI) by using a halo-tolerant bacterium *Halomonas* sp. The twelfth paper by Tiwari and Arora describes talc based EPS formulation enhancing the growth and production of *Helianthus annuus* crop under saline conditions. The thirteenth paper of Kumar et. al. shows identification and structure elucidation of antimicrobial compounds produced from *Lyngbya aestuarii* and *Aphanothece bullosa*. The fourteenth paper of Arun et. al. discusses about Chromium (VI) sensitivity of halotolerant *Dunaliella* strains and its perspective application in bioremediation of tannery industry effluent. The fifteenth paper by Prakash et. al. describes the Histone demethylases and control of gene expression in plants. In the sixteenth paper by Singh and Singh discusses the importance of algae as a potential source of biofuel. The seventeenth paper by Dixit and Singh reveals the differential efficiency of free living, immobilized and non-viable biomass of cyanobacterium *Nostoc muscorum* in removal of heavy metals like Cd and Pb..

We are thankful to all the contributors to this theme issue of CMB. We hope that this theme publication will be useful and appreciated by all academicians and scientists working on different aspects of Environmental issues, particularly on Bioremediation and Bioenergy.