

Registration Form

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 Title of the paper

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Please complete and return this form along with the Demand Draft towards Registration/ Accommodation fees to the organizing Secretary.

**If required, photocopies of the registration form can be used.*

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Address for Correspondence:
 Organizing Secretary
 Nat. Conf. Rec. Adv. & Tren. Biotech.
 School of Studies in Biotechnology
 Pt. Ravishankar Shukla University
 Raipur 492 010, Chhattisgarh
 Phone: 0771-2263022 (O), 09827114218 (M),
 09425228966 (M)
 E-mail: bioconf2020@gmail.com



National Conference
on
Recent Advances & Trends in Biotechnology
10 - 12 January 2020



Sponsored By
 University Grants Commission
 New Delhi



Organized By
 School of Studies in Biotechnology
 Pt. Ravishankar Shukla University
 Raipur 492 010, Chhattisgarh

In Collaboration With
 Pt. Deendayal Upadhyay Memorial
 Health Science & Ayush University
 of Chhattisgarh, Raipur



About Seminar

The focal theme of biotechnology is to cater the day to day needs of human beings and their betterment. Therefore, it becomes important to be updated time to time with the advances made recently in distinguished domains of this subject. The three days National Conference will cover recent trends and, developments made in the various disciplines of biotechnology. This conference will attempt to fulfill the knowledge gap existing between the students and faculties/scientists of biotechnology, and provide a suitable platform for exchange of ideas as well as open up possibilities of collaborative and interdisciplinary research.

Objectives

- To generate knowledge regarding propagation practices and analyses of bioactive ingredients of important medicinal plants.
- Conserve threatened and rare flora and fauna.
- Identification of microbial communities for their therapeutic and industrial exploitation.
- Development of green fuel as an alternative source of energy.
- Usage of bio-remediation strategies to make the existing environment cleaner.

Thematic areas

- Biodiversity and its Conservation
- Bioremediation
- Ethnomedicine
- Microbial Biotechnology
- Alternate Sources of Energy
- Herbal Technology
- Plant Biotechnology
- Free Sessions in the Folds of Biotechnology

Call for abstract

The National Conference invites the abstracts from the delegates of all over the country including guest/invited speakers, faculties, research scholars and post graduate students from different organizations, and entrepreneurs. Each technical session will comprise of invited lectures, oral and poster presentations. The conference will a suitable forum for sharing of new advances, current trends and research conclusions.

For any thematic area abstracts may strictly be submitted via E-mail at bioconf2020@gmail.com. Abstracts (not more than 300 words) should be prepared using Times New Roman (12pt) and single line spacing. Title should be in bold. Abstracts should be free from plagiarism. Mention names of the authors, affiliation and mail ID of corresponding author. Underline the name of presenting author. Abstracts must have background of the work, methods, results and conclusions. The dimensions of the poster should not exceed 30 inches wide and 40 inches high.

About Raipur

Raipur is the capital city of the state of Chhattisgarh. It is important in both historical and archeological point of view. Raipur is located about 300 kms from Nagpur in the East on the Mumbai-Kolkata trunk line. It is well connected with major cities of India by air, rail and road transport. In January, the climate of Raipur is pleasant. Normal winter clothing and other outfits will suffice.

About University

Pt. Ravishankar Shukla University is the largest, oldest and NAAC accredited "A" Grade institution of higher education in Chhattisgarh, founded in 1964. The university presently comprising of 30 teaching departments with advanced academic courses and is involved in research at the National and International levels.

About Department

School of Studies in Biotechnology came into existence with the immense effort of our former Head Prof. K.L. Tiwari, under the faculty of Life Sciences. The foundation of the School has been made in 2004, comprising different branches of Biotechnology. Since then, the school is progressing towards its heights. The school runs Post Graduate, M. Phil. and Ph. D. programs. The faculties of this school are pursuing research activities actively in diverse fronts of biotechnology viz.; Bioprocess Engineering, Plant Biotechnology, Bio-fuels, Enzyme Technology, Abiotic Stress Biology, Bioremediation, Fungal Taxonomy, Mushroom Technology and Aerobiology.

Registration Fee (On or Before November 30, 2019)

PG Students	Rs 1000.00
Ph.D./M.Phil. Scholars	Rs 1500.00
Faculties/ PDFs	Rs 2000.00

Dates to be remember

Abstract Submission	November 30, 2019
Acceptance Notification	December 15, 2019
Registration	November 30, 2019



Report of the National Conference

held at

School of Studies in Biotechnology, Pt. Ravishankar Shukla University, Raipur 492 010

Three days national conference from 10th -12th January 2020 was organized by School of Studies in Biotechnology, Pt. Ravishankar Shukla University Raipur, Chhattisgarh in collaboration with Pt. Deendayal Upadhyay Memorial Health Sciences and AYUSH University of Chhattisgarh, Raipur, on Recent Advances and Trends in Biotechnology.

The inaugural function was presided by Prof. Keshari Lal Verma, Honorable Vice Chancellor, Pt. Ravishankar Shukla University, Raipur Chattisgarh. Dr. P.G. Rao, CSIR- former director, and distinguished Scientist, CSIR-NEIST, Jorhat was present as Chief guest, while, Dr. Manoj Prasad, Senior Scientist, National Institute of Plant Genomic Research, New Delhi was the Guest of honor. Prof. Girish Kant Pandey, Registrar, Pt. Ravishankar Shukla University, Raipur Chhattisgarh and Dr. R. Hishikar, Registrar, PDUMHSAU, Raipur, were also present for the same.



Dr. Manoj Prasad delivered the key note lecture titled ‘**Structural and Functional Genomic Interventions in the C4 model. Foxtail Millet (*Setaria italica* L.) towards Enabling Climate Resilient Agriculture**’. He described the development of molecular markers like EST-SSRs, intron length polymorphisms, miRNA-based and transposable elements-based markers in foxtail millet which can aid in the further construction of physical maps, germplasm characterization, phylogenetics and comparative mapping studies with respect to other millets, cereals and bioenergy grasses. He concluded that the genetic and genomic resource obtained through these

techniques would help in crop improvement programs involving millets, non-millets and bioenergy grass species, and thus possess a scope for addressing global food insecurity.

In this Conference, more than 300 young and seniors scientists, faculties and students from various esteemed organizations recorded their participation. A total of 255 young researchers registered in this conference out of which 238 attended the event.

A total of 14 renowned scientists/ academicians from prestigious organizations delivered invited lectures. A total of 161 abstracts were received for this Conference, out of which 89 were listed for oral presentation and 72 for posters. Total 117 (47 oral and 70 poster) young researchers actively presented their research work in different themes of this conference. All the presentations were conducted in nine technical sessions, seven for oral and two for poster presentations, in the span of 3 days.



Invited talks were conducted in seven technical sessions.

First Technical Session:

1. Prof S Saraf - Pt. Ravishankar Shukla University, Raipur

Prof S Saraf spoke on ‘**Biotechnology and Pharmaceutical Industry**’. He briefed the audience on the collaboration of Biotechnology and Pharmaceuticals – Biopharmaceuticals, its significance and application, rather than the usually used chemical pharmaceuticals. He also said that India is currently placed at second position in Asia, and is in top ten in the whole world in the field of utilizing biological products as pharmaceuticals. He also discussed the effect of this fusion on health sector with respect to challenges faced and future perspectives.

2. Prof PK Mohapatra - Ravenshaw University, Cuttack

Prof PK Mohapatra delivered his lecture on '**OJIP Fluorescence Transient for Analysis of Biotic and Abiotic Stress Effects in Plants**'. He explained the role of OJIP fluorescence transient, fluorescence measuring technique, change in its patterns and magnitude with respect to abiotic and biotic stress. The speaker gave the example of the intensity of concentration dependent fluorescence rise as well as the shape of OJIP fluorescence transients in green algae *Chlorella vulgaris* and cyanobacteria *Anabaena* sp. PCC 7119 and *Synechocystis* sp. PCC 6803, under insecticide (dimethoate and chlorpyrifos) applied stress.

3. Dr PK Patra - CIMS, Bilaspur

Dr PK Patra spoke on '**Regenerative Medicine: A Hope for Future Medical Practice**'. According to his lecture, the regeneration property of stem cells, in the human body, with unrestricted potential to divide is used for the regeneration and repair of cells within the body during tissue/organ anomalies occurring due to congenital defects, disease, and age associated effects. This could aid burn victims, repair central nervous system diseases such as ischemia and cerebral palsy, cardiovascular diseases, as well as autoimmune diseases including type I diabetes. He also explained the concept of regenerative medicine through his experiment on non-healing ulcer, on 110 patients, using autologous PRPP and mesenchymal stem cells.

Second Technical Session:

1. Prof LVKS Bhaskar-Guru Ghasidas University, Koni, Bilaspur

Prof LVKS Bhaskar delivered a lecture titled '**Experimental Studies on the Possible Mechanisms Involved in Testing the Herbal Medicines used for the Treatment of Sickle Cell Anaemia**'. The speaker emphasized the use of herbal medicines to fight Sickle cell disease (SCD) for which there is only one FDA approved drug present. As there are restrictions on drug therapies, transplantations, and several possible side-effects, herbal medicines can be an alternate SCD. The herbal preparations in SCD condition have shown different activities such as anti-sickling, anti-aggregating, anti-polymerization, radical scavenging or antioxidant, anti-inflammatory, analgesic, anti-pyretic and anti-dehydrating to anti-osmotic effects.

Third Technical Session:

1. Prof Kashinath Bhattacharya-Visva-Bharati,Santiniketan, West Bengal

Prof Kashinath Bhattacharya briefed the audience on ‘**Pollen/ Spore Allergy and Allergen Biology in India**’. According to his presentation allergens originating from pollen grains, fungal spores, foods, insects and house dust mites, have resulted in an increase in the prevalence IgE-mediated atopic diseases in the last few decades. India, being the home of diverse climates, vegetations, and food habits, has a broad range of these allergens. The speaker mentioned the possible mechanism to prevent spore allergen based on the biochemical, immunological and molecular information on the various allergens vis-a-vis allergen specific immunotherapy testified from India.

2. Prof Rizwan Hasan Khan-Head and editor IJBM

Prof Rizwan Hasan Khan gave a lecture on ‘**Role of Surfactants on Amyloid Fibrillation**’. He explained the implication of electrostatic and hydrophobic properties of surfactants in protein aggregation. Investigation was done by using measurements of turbidity, Rayleigh scattering, ThT and CR dye binding, DLS as well as far-UV CD. The speaker concluded that greater the charge on the surfactants or greater the hydrophobicity of surfactants (proportional to the C chain length) more is the protein aggregation and more amyloid fibril formation. Among the anionic surfactants studied by the presenter, AOT had a much stronger propensity to induce amyloid formation than SDBS and SDS.

Fourth Technical Session:

1. Prof RLS Sikarwar-Deendayal Research Institute,Chitrakoot, Dist. Satna

Prof RLS Sikarwar presented a detailed lecture titled ‘**Indian Sub Continent, A Treasure Trove of Biodiversity: Present Status and Future Strategy**’. He gave a detailed view of the present biodiversity of India - 48,158 plants, and 91,000 animal species. Various species of Angiosperms, Gymnosperms, Fungi, Algae, Lichens, Bryophytes, Pteridophytes and Bacteria found in India were also mentioned. Endemic species, i.e. species restricted in Indian subcontinent only were also given a special mention. The author mentioned that India was known as “Hindustan Centre of Origin of Cultivated plants” as 167 species of crops, 335 species of wild relatives and several species of domesticated animals have originated here. He emphasized the role of government and personal efforts to stop the natural and man-influenced

disturbance of biodiversities, certain government measures already implemented, and further measures that need to be taken.

2. Prof RC Dubey-Gurukul Kangri University, Haridwar

Prof RC Dubey spoke on ‘**Probiotics: The Health Improving Microbes of Future**’. He explained the significance of living beneficial microorganisms, produced industrially and made commercially available as “probiotics” when administered in adequate amounts, to get rid of pathogenic microorganisms, such as *Bifidobacterium* which includes *B. bifidum* and *B. longum* strains (used for control of mineral absorption and regulation of other bacteria), *Enterococcus faecium* (affect cholesterol levels and relieves symptoms associated with antibiotic diarrhea), *Lactobacillus* - *L. acidophilus*, *L. bulgaricus* and *L. rhamnosus* strains, and *Streptococcus thermophilus* (lactose digestion and aid persons who are lactose-intolerance). The speaker also talked about synbiotics, a fusion of probiotics and prebiotics for the maintenance of beneficial microorganisms in human body. He discussed the increasing demands of probiotics in food and dietary supplements industry.

3. Prof Surekha Kalkar-Institute of Science, Nagpur

Prof Surekha Kalkar discussed ‘**Pollen Grains as Sustainable Material for Research in Advanced Technology**’. The speaker spoke on application of sporopollenin – in the exine, outer layer of spore wall as a micro-carrier in drug delivery systems, oral vaccinations, food, pharmaceuticals, cosmetics and personal care industries. The sporopollenin is a highly cross linked polymer composed of hydrogen, oxygen and carbon, which is thermally and chemically stable and has been preserved as fossils from 500 million years ago. Also, the speaker emphasized that as pollen grains are obtained from plants they are sustainably explorable sources in accordance with the environment.

Fifth Technical Session:

1. Prof. SM Prasad-University of Allahabad

Prof SM Prasad spoke on the ‘**Role of Nitric Oxide in Managing Chromium (VI) Toxicity in Vegetables by Application of Calcium and Sulfur**’. He listed the significance of nutrient management is maintaining toxic metal pressure citing the example of C or S in reducing Chromium (VI) toxicity. Exogenous addition of either Ca or S reversed the side effects of metal

toxicity and hence improved growth noticed in both vegetables tomato and brinjal. The speaker also suggested that NO may have a possible role in the reduction of Chromium (VI) toxicity.

2. Prof. Milind Jadhav- Sir Sayyed College, Roshan Gate, Aurangabad

Prof Milind Jadhav presented his findings on ‘**Soil Algal Flora - Diversity and Abundance**’ His Present research work analysed the algal flora in cultivated and non-cultivated fields, correlation between physiochemical parameters of soil and rhizosphere algal flora. *Cyanophycean* algae were found dominant in soil of cultivated and non-cultivated fields in the experiment. *Gloeocystis*, *Chlorococcum*, *Chlorella*, *Nitzschia*, *Gloeotheca*, *Aphanothece*, *Myxosarcina*, *Oscillatoria*, *Phormidium*, *Microcoleus* and *Plectonema* were found in maximum amount.

Sixth Technical Session:

1. Prof Vishnu Agrawal-Motilal Nehru National Institute of Technology Allahabad

Prof Vishnu Agrawal spoke on topic ‘**Quorum Sensing at the Crossroad of Inter-kingdom Signaling**’. The speaker spoke on biofilm and quorum sensing, as all the human pathogen, including *P. aeruginosa*, causes pathogenesis through their biofilm mode of growth in which quorum sensing triggers their gene for biofilm mode of growth and lead to virulence and pathogenesis. Quorum molecules have effects on neutrophils, its functions and apoptosis, platelet activation and autophagy of macrophages. According to the speaker research can be done on infections and their side effects related to biofilm microorganisms and quorum sensing, even after the microorganism population is cleared.

Seventh Technical Session:

1. Prof YK Bansal-R.D. University, Jabalpur

Prof YK Bansal discussed ‘**Selective Protocols for *In Vitro* Propagation and Secondary Metabolite Production of some Important Medicinal Plants of Madhya Pradesh**’. Discussing the role of medicinal plants in human lives the speaker discussed the methodology for micropropagation and secondary metabolite production of some endangered herbal plants of Madhya Pradesh.

2. Prof SB Verulkar-Indira Gandhi Krishi Vishwavidyalaya (IGKV), Raipur

Prof SB Verulkar explained ‘**Genomic Approaches for Genetic Improvement of Rice for Rainfed Ecosystem - Precision Phenotyping and Genotyping**’. He discussed Marker Assisted Selection in Rice Improvement Program. In this presentation he gave details on simultaneous identification and selection for multiple QTLs, Improvement of mega varieties - incorporation of major QTL(s) and transfer of Major Gene(s) and Pyramiding.



In this Conference, a cultural program was also organized by the students of School of Studies in Biotechnology, Pt. Ravishankar Shukla University Raipur, after a long day of interactive lectures on 10th January 2020.



This Conference was empowered by various National funding agencies like SERB, DBT, CSIR, UGC, CGCOST, POC and other enterprises such as HiMedia lab, Borosil Glass work, Surana, Kasliwal Brothers, Syma Medical & Dental Surgical Raipur, Chhattisgarh.

The conference concluding ceremony was presided by Prof Chandra Deo Singh, Vice Chancellor, Indira Gandhi National Tribal University, Amarkantak, Madhya Pradesh, Prof A.K. Chandrakar, Vice Chancellor Pt. Deendayal Upadhyay Memorial Health Sciences and Ayush University of Chhattisgarh, and Prof Keshari Lal Verma, Vice Chancellor, Pt. Ravishankar Shukla University, Raipur. Prizes were distributed to best presentations in both oral and poster category. The program ended with vote of thanks and hi-tea.



(Keshav Kant Sahu)
Organizing Secretary