

National workshop
on
GENOMICS FOR MICROBIAL DIVERSITY
AND TAXONOMY
(GEMTAX- 2019)
January 21-25, 2019



Sponsored by MoEFCC, GoI



Organized by

Department of Life Science

NATIONAL INSTITUTE OF TECHNOLOGY,

ROURKELA- 769008, ODISHA



About the workshop

Microorganisms have largest genetic diversity on earth, billions of species of bacteria are suspected to exist, however only 1-5% of them are characterized. This workshop will be useful for the participant to enumerate the heterogeneity of microbes in various adverse environment by both culture dependent and culture independent approaches. Due to increasing anthropogenic activities, the natural biodiversity of our environment is getting disturbed. In this regard, the workshop will be helpful for the participants to learn various methods and techniques involved in studying microbial diversity through isolation, culture and various genetic approaches. And the lectures that will be given by illustrious researcher will be useful for the participants for their further research and career.

Course modules

Following methods and techniques will be demonstrated:

Module 1: Culture dependent microbial diversity

Isolation of bacteria and fungus, sub culturing and identification of bacteria and fungi, preservation techniques, isolation of genomic DNA from bacteria and Fungi, phylogenetic analysis and identification of nitrifying and denitrifying bacteria through marker gene.

Module2: Culture independent microbial diversity

Isolation of metagenomic DNA and amplification of 16S rRNA and 18S rRNA gene from bacteria and fungi respectively.

Module 3: Biofilm: a natural phenomenon of microbial community

Qualitative & quantitative biofilm assay, characterization of microbial biofilm by fluorescence microscopy, detection of bacterial autoinducers through semi-prep HPLC.

Module 4: Sequence analysis and phylogeny

Identification of bacterial strains, primers designing, analysis of 16S rRNA and 18S rRNA gene sequences, submission of sequences to GenBank, Construction of phylogenetic tree.

Resource persons

Faculty members and scientists from renowned university/ institute will deliver lectures.

Who can participate?

Research Scholars, early career Scientists and Faculty members engaged on study/research on microbial diversity and taxonomy. Maximum 20 participants will be selected on the basis of research interest. Completely filled registration forms along with respective fees will only be considered for participation. Registration fee will be refunded to the non-selected candidates.

How to apply?

Interested participants can download the [registration form](#) and may send along with registration fees through demand draft drawn in favour of **CONFERENCE NIT ROURKELA** payable at SBI, NIT campus, Rourkela (Code: 2109) on or before **5th December, 2018**. Selected participants will be intimated through E-mail on **7th December, 2018**. Applicants are requested to send the hard copy of registration form along with Demand Draft to the Convener.

Category of participants	Registration fee
Research Scholars and students	Rs.5000/-
Faculty members of Academic Institutions	Rs.6500/-
R & D Scientists	Rs.7500/-

Registration fee includes accommodation (twin sharing) from 21-25 January, 2019, workshop manual, and lunch for all the five days.

About the Department

The Department of Life Science, National Institute of Technology, Rourkela has well equipped laboratories with sophisticated instruments. It is presently running postgraduate and research programs viz., M.Sc., Integrated M.Sc., and Ph.D. in Life Science. The Laboratory of Environmental Microbiology and Ecology (LEnME), Dept. of Life Science is engaged in the research field of taxonomy and diversity of culture-dependent and culture-independent heterotrophic bacteria, biofilm mediated bioremediation, bioremediation of heavy metals, poly aromatic hydrocarbons and petroleum hydrocarbon, nano-remediation of toxic pollutants by iron oxide nano particles synthesized from fungus, biofilm based waste water treatment and fish immunology. During the short span of time, the department has organized national, international seminars and workshops.

Laboratory & facilities

Department of Life Science, NIT, Rourkela is well equipped with specialized facilities like:

Gradient PCR machine, qRT PCR machine, Gel doc, Microplate reader, UV- Visible spectrophotometer, Refrigerated centrifuges, Fermenter, Deep freezer (-80°C), Gel electrophoresis system, FTIR-spectroscopy, Lyophilizer, Fluorescence microscope, Flow cytometry, Autoclave, High-performance liquid chromatography.

About NIT Rourkela

NIT Rourkela is one of the premier national level institutions for technical education in the country and is funded by the Government of India. The campus of the institute is situated at the eastern end of Rourkela steel city, beyond Sector-1, on land sprawling over 262 hectares provided by the Government of Odisha. There are 22 departments offering various academic programmes viz., M.Sc., Int. M.Sc, M.A., MBA, B.Tech, M.Tech and Ph.D. Students of NIT Rourkela enjoy a number of facilities which include various societies for achieving their dreams, boarding and lodging facility for all students, modern gymnasium, swimming pool, all games and sports facilities, career guidance, medical facilities.



About Rourkela

It is the third largest Urban agglomeration in Odisha. It is situated about 340 kilometres north of state capital Bhubaneswar and is surrounded by a range of hills and encircled by rivers. The city is also popularly known as Ispat Nagar and also as the Steel City of Odisha. The city has several tourist destinations like, Hanuman Vatika, Vedvyas Temple, Mandira Dam, Vaishnodevi Temple, Indira Gandhi Park, Pitamahal Dam and many more.



For any queries regarding this workshop, please contact

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