



KARYASHALA

High End Workshop on “Process Modelling, Simulation and Optimization in Biological Systems: A Hands-on Training Approach”

20th – 26th May 2024

Funded by: Science and Engineering Research Board (SERB), DST, Govt. of India, under Accelerate Vigyan Scheme
Organized by: National Institute of Technology Andhra Pradesh, Tadepalligudem, Andhra Pradesh

About Workshop:

The main objective of this workshop is to acquaint the participants with the bioprocess modelling, simulation and optimization. Modelling and Optimization are the key in the success of any industrial bioprocess in which many valuable chemical and biological molecules are produced to meet the social needs from daily needs to advanced drugs. Speakers will cover fundamentals of bioprocess modelling, simulation and optimization techniques and the research progress in the above said areas. Workshop will be helpful for the researchers working in the areas of Bioprocess Engineering, Biopharmaceuticals, Process Design, Modelling of Biological Systems, Metabolic Engineering, Systems Biology, Biofuels and Environmental Engineering.

About Karyashala:

Science and Engineering Research Board (SERB) a statutory body under the Department of Science and Technology, Government of India has inaugurated an Inter-Ministerial Initiative 'Accelerate Vigyan (AV) Scheme' to provide a big push to high-end scientific research and prepare scientific manpower which can venture into research careers and knowledge-based economy. AV aims to expand the research base in the country, with three broad goals consolidation/aggregation of all scientific training programs, initiating high-end Orientation Workshops, and creating opportunities for Research Internships. Under AV scheme, is an attempt to boost Research & Development in the country by enabling and grooming potential UG, PG and Ph.D. level students by developing dedicated research skills in selected areas/disciplines/fields through High-End orientation workshops 'KARYASHALA'. This will be especially important for those researchers who have limited opportunities to access such learning capacities/facilities/infrastructure.

Patron

Prof. B.S. Murty
Director (I/c)
NIT Andhra Pradesh

Coordinator / Event Organizer

Dr. Rajeswara Reddy Erva
Assistant Professor
NIT Andhra Pradesh



Speakers

Prof. V. Venkata Dasu
Professor
IIT Guwahati

Prof. R. Satish Babu
Professor
NIT Warangal

Prof. Kunal Pal
Professor
NIT Rourkela

Dr. P. Shanmugam
Chief Scientist
CLRI - Chennai

Dr. Jagadeeshwar Kodavaty
Associate Professor
UPES Dehradun

Prof. S.V. Satyanarayana
Professor
JNTU Ananthapur

Workshop Schedule

| Date | Session - 1 | Session - 2 (Hands-on) |
|---------------------------|---|---|
| 20 th May 2024 | Submerged membrane bioreactor for the treatment of tannery waste water producing biogas | Bioreactor design and simulation for biogas production |
| | Dr. P. Shanmugam | Dr.P. Shanmugam |
| 21 st May 2024 | Modelling and simulation of biological systems-I | Modelling and simulation of bioprocesses using Berkely Madonna |
| | Prof. R. Satish Babu | Prof. R. Satish Babu |
| 22 nd May 2024 | Modelling and simulation of biological systems-II | Modelling and simulation of bioprocesses using Superpro Designer |
| | Prof. R. Satish Babu | Prof. R. Satish Babu |
| 23 rd May 2024 | Design of heat exchanger network in process intensification | Temperature control in a heat exchanger using MATLAB & Simulink |
| | Dr. Jagadeeshwar Kodavaty | Dr. Jagadeeshwar Kodavaty |
| 24 th May 2024 | Enhanced production of metabolites using metabolic engineering and systems biology approaches | Determination of volumetric mass transfer coefficient in a batch bioreactor |
| | Prof. V. Venkata Dasu | Prof. V. Venkata Dasu |
| 25 th May 2024 | Modelling & simulation of pervaporation process for bio ethanol production | Optimisation of pervaporation process parameters by Genetic Algorithms |
| | Prof. S.V. Satyanarayana | Prof. S.V. Satyanarayana |
| 26 th May 2024 | Oleogels for biomedical and food applications | Preparation and characterization of Oleogels |
| | Prof. Kunal Pal | Prof. Kunal Pal |



Who can attend:

The workshop is open to Undergraduate (Final Years only), Postgraduate students and PhD scholars of Biotechnology and allied/interdisciplinary areas from all Institutes and Universities of India. Total number of seats is limited to 25.

The participants will be selected on first-come-first-serve basis based on their eligibility and relevance. The selected applicants will be provided boarding & lodging at NIT Andhra Pradesh hostels.

The traveling expenses [booked only through IRCTC or M/s Balmer Lawrie & Company Limited (BLCL) or M/s Ashok Travels & Tours (ATT) - AC 3 tier train or any state govt. transport system] will be reimbursed subject to submission of original tickets (not exceeding Rs. 2,500/- per candidate).

Note: All the selected candidates are advised to bring their own laptops.

"There is no registration fee"

How to apply:

Link to registration form: <https://tinyurl.com/yhz6nzn5>

Download NOC: <https://tinyurl.com/2urs3xjd>

Download Undertaking Form: <https://tinyurl.com/24r8zav9>

Important dates:

Registration Opens : 12th April 2024

Last date for Application : 26th April 2024

Communication to shortlisted candidates : 28th April 2024

Event Dates: 20th – 26th May 2024

For queries:

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