

Scale-up of Bioreactors and fermenters



CSIR Integrated Skill Initiative

Schedule:

Online program

04-06th October, 2021

No. of seats: 10 (min.)

Course fees:

1000/- for regular

& 1500/- for sponsored

Introduction:

Fundamental engineering principles find application for design and scale-up of bioreactors and fermentation unit operation. For any product(s) to be launched by industries; scale-up studies play a crucial factor to demonstrate the process from lab to pilot/commercial scale and hence the basic engineering principles have to be thoroughly understood for successful demonstration across any scale. This course work focuses on understating these fundamental engineering principles and its role for successful scale-up operation of bioreactors.

Course Work:

- Rheology and Scale-up of mixing systems
- Concepts of mass and heat transfer, concepts of oxygen transfer rate (OTR) and oxygen uptake rate (OUR) in fermentation, Measurement of $k_L a$ and mass transfer correlations for OTR
- Growth, death and production kinetics in fermentation
- Analysis of batch and continuous processes for fermentation

Session(s) on:

Lab Scale and Pilot scale fermentation operation, Process Scale-up.

Job Opportunities

Biotech and biopharma industries

Production managers in Biotech industries

Eligibility

B.Tech in Biotechnology, Biochemical/Chemical Engineering

M.Sc in any Biological Sciences/M Tech in Biotechnology, Biochemical/Chemical Engineering



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