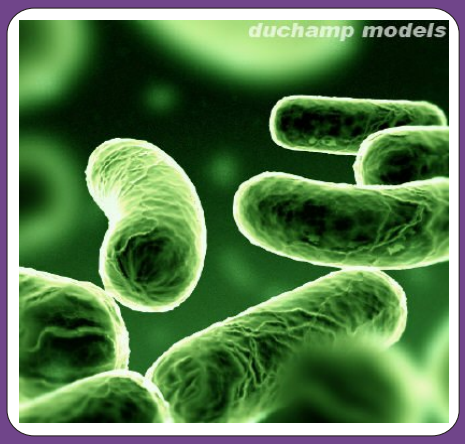
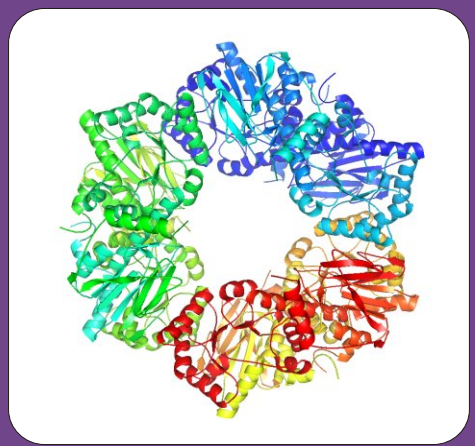
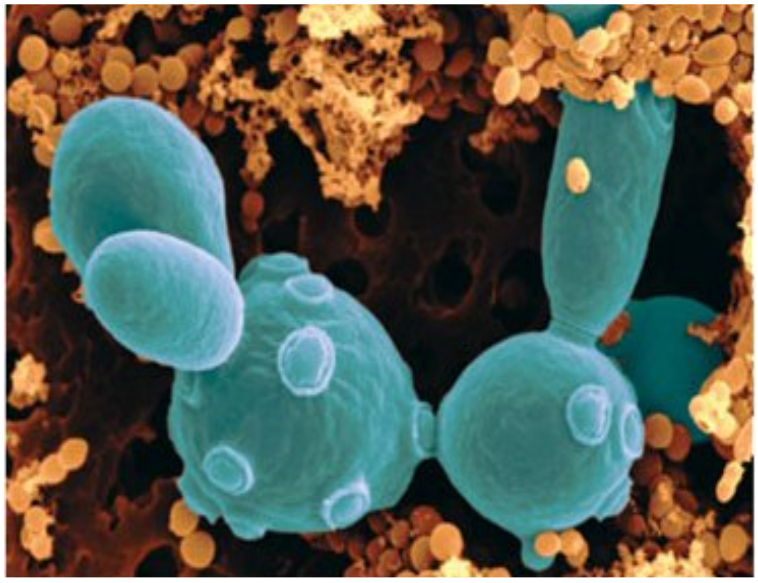




BIO-AGE

An ISO 9001:2008 Company

Biotechnology: Training and Projects



PROSPECTUS

BIO-AGE EQUIPMENTS AND SERVICES

Training and R&D Centre

Plot No. 468, JLPL, Industrial Park, Sector-82, Distt. Mohali, Punjab-140306 -India
Mobile: +91-9356781234, +91-9872004528
E-mail : info@bioageindia.com, Website: www.bioage-equipments.org,
www.indiamart.com/bioageindia

BIO-AGE

COMPANY PROFILE

Bio-Age is a young and fast growing company dealing in the field of indigenous manufactured and imported Biotechnology equipments i.e.

1. Water Purification Systems, Fermentors / Bioreactors Orbital / Rotary shakers, Incubator shakers / Uf System and spectrophotometer for Laboratory to Pilot scale Applications.
2. Future focused products like Proteins Purification System, enzymes Purification System.

Bio-Age was established in February-2004 in Mohali, Punjab as a Marketing for Laboratory Fermentors and Water Purification Systems.

A leading supplier of Laboratory equipments for Biotechnology institutes/laboratories, primarily for Fermentation and Ultra Pure water purification. The company has created niche in the specialized market of Bioreactors and Ultra Pure Water Purification Systems within a short span since its inception. The company has supplied more than 1000 Water Purification Systems/Bioreactors across the country during this period.

Bio-Age has a nationwide distributor network to provide prompt sales and after sales services. The company has more than 30 channel partners across the country working coherently with a team of technically proficient engineers.
In 2007 Company also Started practical training on Upstream and Downstream Process related to fermentation technology/ water purification system area in its in-house training and R&D Center.

In 2011. Company Started manufacturing all Products, fermentors / water Purification systems/ shakers/ Spectrophotometer and Ultra Products and became independent limit having mfg/Trading/Training and R&D activities

2012. Company Shifted focus for core R&D to Product development R & D and activities Under Product Development: Next product under R&D enzymes and Purification Systems.

https://bioage-equipments.org

http://www.bioageindia.org

COMPANY OVERVIEW

BIO-AGE












BIO-AGE

TRAINING AND R&D CENTRE

Training centre **'BIO-AGE EQUIPMENT AND SERVICES" Plot No. 468, JLPL, Industrial Area, Sector-82, Mohali** under the patronage of **Mr. S.K. Rana,** was set up in April 2007, inaugurated by honorable **Sardar H.S. Mattewal** (Advocate General, Punjab & Haryana High court, Chandigarh) on May 12, 2007, at earlier place SCO-1, Phase-9, Industrial Area, Mohali. (Pb) with an active support of **Dr. Girish Sahni**, Director, IMTECH, Chandigarh, **'LIONS CLUB Chandigarh Greater"**, several other institutions and all well wishers from Mohali and the City Beautiful. Now the center is in form and able to provide excellent training, can be of assistance at industry level, particularly in Pharmaceuticals.

OBJECTIVE

The prime objective of this centre is to **impart quality practical exposure** in the field of **Fermentation and Water Purification** and allied aspects to the students in general, faculty and the company executives. Bio-Age, also contributes in preparing young biotechnologists to face the industry with confidence and become successful in this field. The company also provides a platform to the scientific community/industry/s to try/scale up their new products on hire basis, prior to its final launch without investing in their own laboratory set up.

FACILITIES AT BIO-AGE

- Internet connected Labs to help the project students while preparing their thesis etc.
- Newly constructed Fermentation Lab. with modern equipment/s and facilities.
- All labs and lecture hall are Air-conditioned with excellent acoustics.
- Lecture hall is well equipped with Multimedia facilities like LCD/OH Projector etc.
- Training Centre is surrounded with well groomed green belt to provide pollution free learning environment.
- Assistance in arranging PG accommodation is provided for outstation students in the nearest possible location in Mohali city on request.
- Prior company presentation (regarding training) is arranged in the respective colleges for interested students of Biotechnology stream on request basis as per the convenience of HOD/Principal. Please contact Director/Co-ordinator Training for the same over Phone/Email/Letter etc. as given on cover page.

TRAINING DURATIONS

Duration of the course/s depends upon the option selected by the candidates as under :

- 3-Day workshop on Batch/Fed Batch fermentation.
- Two weeks Training programme for Institution/ College faculty/ Students.
- Four weeks Training programme for Institution/ College faculty/ Students.
- Six weeks Training programme for Institution/ College faculty/ Students.
- Project work for 3 or more than 3 months i.e. 6 months.
- Fermentation laboratory-facility on hire basis.
- Industrial Biotechnology Course for one and a half months(Theory and Practicals)

TRAINING HOURS

Morning Batch 09.30 a.m. to 1.30p.m. Evening Batch: 02.00 p.m. to 5.30 p.m.
5 days a week (Is subject to change as per the requirement and number of Batches during summer break)

BIO-AGE

TRAINING MODULES

Two to Six weeks Training Modules **Batch size 20-40 Students**

WEEK 1

Theory: Introduction to General Biotechnology, Microbiology, Microscopy and Fermentation Technology

(A) A brief introduction of Instruments

- Laminar air flow
- Biosafety cabinets
- Bright field Microscope
- pH meter
- Autoclave
- Refrigerated centrifuge
- Shakers
- Water purification systems
- Auto pipettes
- Weighing balances
- Filtration Techniques

(B) Screening and isolation of bacterial/ fungal strains for the production of industrially important enzymes

- Preparation of media for the cultivation of Yeast/Bacteria/Fungi.
- Sterilization of media and equipments (autoclaving and filter sterilization)
- Culturing techniques
- Staining techniques
- Maintainence of cultures

(C) Microscope handling

- Simple staining
- Gram's staining
- Total bacterial count by DMC
- Total and viable yeast cell count by haemocytometer

Week 2

Theory: (A) Types of Fermentations, Alcohol production, Enzyme production and their Assays.

Practical: (A) Estimation of the generation time for the selected bacterial culture by spectrophotometric methods

(B) Production of industrial enzymes by

- Solid State Fermentation.
- Submerged Fermentation
- Surface Fermentation

Enzyme Assays:

- CMCase
- β-glucosidase
- α- amylase
- glucoamylase
- mannanase
- pectinase

Standard curve preparation for reducing sugar/s estimation by DNS method.
(D) Compilation of data; Calculation of International Units of the enzyme activity and specific activity of enzyme

Week 3

Theory: (A) Major Water Contaminants

- Suspended particulate, silt, organic materials.
- Dissolved particulates organic/inorganics
- Bacteria/Viruses/Algae
- Pyrogens/RNase/DNase/ Endotoxins

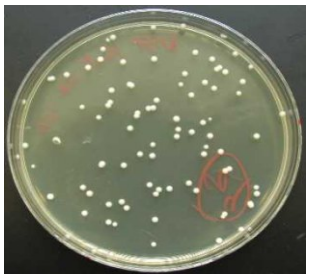
B) Ionic impurities in water purification Techniques:

Sedimentation

- Carbon filtration/Disinfection by chlorine/UV.
- Deionisation(Resins/EDI)
- Distillation/single/double/triple
- Filtration(RO/UF Media).

(C) Membrane filtration

- Laboratory/industrial use of MF
- Manufacturing process of membrane
- Characteristics of membrane and Prefilters.



(D) Types of Membranes/MOC's

- Microfilteration
- Ultrafiltration
- Nano filtration
- Reverse Osmosis
- Role of R.O. technology in water and product purification.

Practicals: (A) Water Testing: Determination of total count of coliform in ground water, effluent water.

(a) MPN Method (b) MF Method

(B) Microbiological Food Testing:

1. Assessment of the bacteriological quality of raw and pasteurized milk.

- MBRT
- DMC
- SPC

2. Assessment of the bacteriological quality of powdered milk products

Week 4

Theory: Fermenter/Bioreactor design and its parts (ex situ).

Practical: (A) Working of Fermenter (ex situ) for alcohol production

(B) Sampling and Analysis for determination of:

- Growth
- Residual substrate
- Product estimation
- Cell count/ml
- pH-variation

(C) Compilation and presentation of data using Sigmaplot.

(D) Work shop Visit.

(E) Verification and submission of Report.

Six Weeks Schedule

Week 5

Theory: Statistical optimization techniques including Plackett- Burman and Response surface methodology.

Practical: (A) Statistical optimization of various cultural and media components for the enhancement of enzyme yields by employing Plackett- Burman and Response surface methodology designs.

(B) Compilation and presentation of data using Sigmaplot.

FERMENTATION LAB FACILITY ON HIRE BASIS

Week 6

Theory: Fermenter/Bioreactor design and its parts (in–situ Type).

Practical:

(A) Working of in- situ fermenter for alcohol production/ enzyme production

- Media preparation.
- cultivation of yeast/Bacteria.
- Sterilization of media and fermenter through steam.
- Dry run for sterility test.
- Inoculation under aseptic conditions.

(B) Standard curve preparation for Alcohol estimation.

(C) Product recovery (by centrifugation)

(D) Alcohol estimation by spectrophotometric method.

(E) Theoretical concept and Practical exposure on HPLC

(F) Work shop Visit.

(G) Compilation of data and report submission.

Eight week Schedule

Week 7

Theory: (A) Methods of sugar estimation.

1. To quantify reducing, non reducing and total sugars by fehling method, anthrone method

(A) Enzyme production and Enzyme kinetics

2. Kinetic characterization of inhouse produced enzyme

The enzyme will be characterized in terms of following parameters

- **Temperature activity profile**
- **pH activity profile**
- **Temperature and pH stability profiles**

Week 8

Theory: Enzyme kinetics: Michaelis Menton constants

Practical: (A) Kinetic characterization of the inhouse produced enzyme

- Effect of various metal ions on the enzyme activity
- Determination of kinetic parameters including Km and Vmax

(B) Compilation of data and report submission.

Hire Basis
- No. of day's laboratory used
- No. of fermentation cycles run
- Type of Culture
- Any technical Assistance required from Bio-Age
- Manpower requirement if any

INDUSTRIAL BIOTECHNOLOGY COURSE

Incase any college is not having sufficient laboratory facility/setup we offer the requisite course completed in our lab setup which includes teaching and practical for the entire course of duration one and a half month.

PROJECT / DISSERTATION WORK

- The company offers the project work to the Post graduate students in various fields such as:
- Isolation and Production of industrially or commercially important enzymes. e.g. cellulases, lipases etc.
- Production of commercially important compounds through biotechnological routes (preferentially production of chirally pure compounds of high value).
- Applications of enzymes and biological systems to obtain valuable products. e.g. application of lipases/esterases for the production of Biofuels.
- Isolation of microorganisms for degradation of toxic and carcinogenic compounds.

BIO-AGE

LABORATORIES AND EQUIPMENTS AVAILABLE

1) GENERAL BIOTECHNOLOGY LAB

- Oil free Vacuum Pump 2 Numbers
- Essential Oil Distillation Unit with Rotavapor complete 1 Number
- Refrigerator 2 Numbers
- Incubator 2 Numbers
- Micropipette (Digital) 2 sets each (2-20µl), (20-200µl), (100-1000µl)
- Digital pH Meter 3 Numbers
- Digital Conductivity Meter 2 Number
- Water Bath 2 Numbers
- Magnetic Stirrer 2 Numbers
- Trinocular Microscope 1 Number
- Binocular Microscope 2 Numbers
- Compound Microscope 5 Numbers
- Weighing Balance 3 Numbers
- Magnetic Stirrer with Hot plate 1 Number
- Cyclomixer 1 Number
- Vortex Shaker 1 Number
- Mixer Grinder 1 Number
- Microwave 2 Number
- Orbital Shaking Incubator 1Number
- Rotary Shaker-1 Number
- Doctor Centrifuge 1 Number

2) DOWNSTREAM PROCESSING

- Electrophoresis 1 Number with power supply
- HPLC (Thermo) - 1 Number
- UV/VIS Spectrophotometer 1 Number
- VIS Spectrophotometer 1 Number
- Elisa Reader 1 Number
- Refrigerated high speed Centrifuge 1 Number
- Ultra Filtration Module 1 Number
- Camera Lucida 1 Number
- Stage Micrometer 2 Number
- Ocular micrometer 2 Number
- Haemocytometer 3 Number

3) LAMINAR ROOM

- Biosafety Cabinets 2 Numbers
- Laminar-1 Number

4) FERMENTATION LAB

- Autoclavable Type Mini Laboratory Fermentor with PC with 1.5 litre capacity 1 Number
- In Situ Sterilisable Laboratory Fermentor 5 litres capacity 1 Number
- Pilot Scale Fermenter 20 litres capacity 1 Number
- Boiler 2 Numbers
- Chiller 2 Numbers
- Split AC-3 Number
- Air Compressor-2 Number

5) WATER PURIFICATION AND UTILITY LAB

- Water Purification System(Ultrapure) 2 Numbers
- Small Autoclave 2 Numbers
- Big Autoclave 1 Number
- Hot Air oven 1 Number

6) Internet Connected Lab

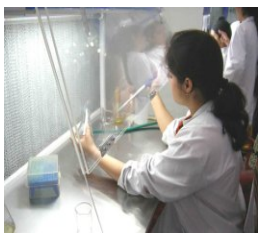
To help the students to prepare their Project Repots/ dissertation work/thesis.

7) Lecture Hall

Beside Laboratory facilities **Bio-Age** having well equipped Lecture Hall with Multimedia facilities like LCD/OH Projector etc.







INTERACTION WITH INDUSTRY

For an efficient working knowledge, the candidates attending course shall be taken to the nearby industries working in the area of Fermentation/Commercial products through Biotechnological routes. Besides our efforts, the candidates can interact with industry/individuals. The cost of travel to and fro for the visit to the industry shall be borne by the candidate for factory visit outside Mohali only. alternatively students will be taken of the company fabrication workshop at Mohali to apprise then about variow ss Fabrication as parts while manufacturing lab to Pilot Scale fermentors.

R&D COLLABORATIONS

The company is focusing on effective R&D programme through collaboration with institutes under the banner of Industry Institute Interaction Programme.

The company presently has a collaborative consultancy project with a faculty member of Panjab University, Chandigarh (India) under IIIP cell.

Another ongoing project is with "Central Institute of Post Harvest And Engeneering Technology" CIPHET Agribiotech division,PAU Campus, Ludhiana & develop new lab fermentors and also on.

"Development of Pilot Scale Technology for Ethanol Production with Wheat and Maize Straw." and emgymes Purification Mechanics.

PLACEMENTS

The candidate shall be apprised of the jobs openings and placements at different places shall be accordingly intimated. Regularly various industries are putting up their demand for absorption of the suitable persons in their industries/institutes. However, this centre will recommend only those candidates who are found active, intelligent and hardworking and have zeal to work according to the industrial requirements. It will be ensured that in no way the company is put to a disadvantageous situation which may lower the image of the organization.

*** Note:** Placement does not mean at any stage that we will produce jobs at suitable places or guaranteed of placement