



**Bharati Vidyapeeth
(Deemed to be University)
Yashwantrao Mohite College of Arts, Science & Commerce,
Pune 38**

INNOVATION CENTRE



Innovation Centre Facilities

College has established Innovation Centre to enhance and share research facilities available in the college. The research facilities available in Innovation centre for Physical, Chemical and Biological Sciences are as below.

Central Instrumentation Facility	
FT-IR Spectroscopy	
	<p><u>ATR-model Nicolet iS5</u> The Thermo Scientific Nicolet iS5 FTIR Spectrometer offers the perfect performance, fit and value for an entry-level spectrometer.</p> <p>Application:It is a rapid, nondestructive, time saving method that can detect a range of functional groups and is sensitive to changes in molecular structure.</p>

Gas Chromatography



Model: Shimadzu GC – 2014 with FID detector

Application: Analysis of organic compounds (low boiler) and purity of compounds

UV-Visible Spectroscopy



Jasco Make Model:V-630- for powder and thin film

Application: This technique is used to detect the presence or absence of functional group in the compound. It is useful in the structure elucidation of organic molecules, such as in detecting the presence or absence of unsaturation, the presence of hetero atoms.

X-Ray Diffractometer



Rigaku Miniflex 600G Model

Application: X-ray powder diffraction is most widely used for the identification of unknown crystalline materials (e.g. minerals, inorganic compounds)

Digital Flame Photometer



(Make systronics 130)

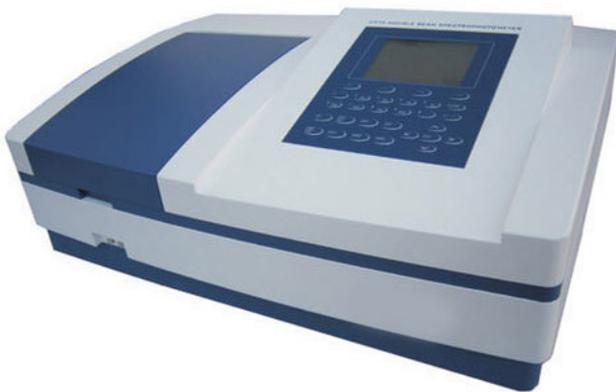
(with Calcium &, Lithium Filter):
Device used in inorganic chemical analysis to determine the concentration of certain metal ions, among them sodium, potassium, lithium, and calcium.

Leica Trinocular Research Microscope with Camera:



Leica Microsystems enable you to view, analyze and document your specimens in two and three dimensions. This is vitally important for understanding or inspecting microscopic structures, their spatial extent and nature.

Double Beam UV- VIS Spectrophotometer



(Make Systronics): All routine applications that are expected of a high-end UV-Vis spectrophotometer and also used for quantitative analysis.

CO₂ Incubator



(Make ESCO Singapore):

The purpose of a CO₂ incubator is to maintain an optimal environment for cell growth, by providing carbon dioxide control in a humidified atmosphere with constant temperature.

Peltier PCR Processor, BioEra:



Commonly used for the synthesis of DNA by polymerase chain reaction (PCR), a common molecular biological technique, which requires the rapid heating and cooling of the reaction mixture for denaturation primer annealing and enzymatic synthesis cycles. It can be used for temperature sensitive reactions.

Fermentor, Hygiene Design (1L capacity, Glass model):



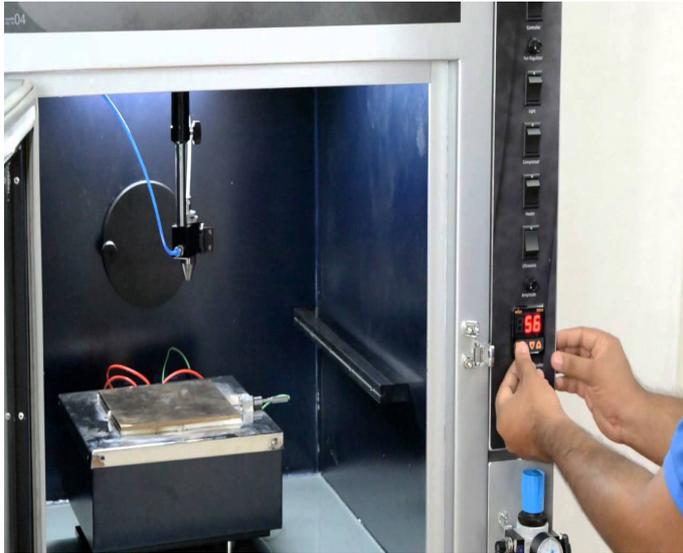
The original purpose of fermentation was to prevent food spoilage, controlled fermentation processes can be used to create a wide range of probiotics, cultures, algae and yeast products, and is widely used in the dairy industry.

Chemical Bath Deposition (CBD) method:



Among novel wet-chemical processes, the Chemical Bath Deposition method is used to synthesize nanoparticles more easily than the other method.

Ultra Spray Pyrolysis:



Another method to develop thin films with uniform particle size and morphology

Remi Refrigerated Centrifuge (With RPM 10000):



Refrigerated Centrifuges are designed for centrifugation of temperature sensitive material and find application in routine and research work in auxiliary laboratories in Educational & Research institutions, Bio Technology, Medical Laboratories, Pharmaceutical & Clinical research laboratories.

Services Offered

Through innovation centre, college provides following services to the students, researchers, academician of our and other colleges and research institutes.

A) Analysis of Sample

- 1) FT-IR analysis
- 2) GC analysis
- 3) XRD analysis
- 4) UV-Visible analysis
- 5) Digital Flame Photometer
- 6) Leica Trinocular Research Microscope with Camera
- 7) Ultra Spray Pyrolysis
- 8) Chemical Bath deposition
- 9) Peltier PCR Processor
- 10) Fermenter

B) Hands on Trainings to students and teachers

- 1) Hands on training on instrument handling and analysis using GC, XRD, FT-IR and UV-Visible spectrophotometer to the UG and PG students of our and colleges nearby.
- 2) Hands on training on instrument handling and analysis using GC, XRD, FT-IR and UV-Visible spectrophotometer to the faculty of our faculty and faculty of colleges nearby.
- 3) Facility of antimicrobial activity is made available to the students of our colleges as well as teachers of nearby colleges.