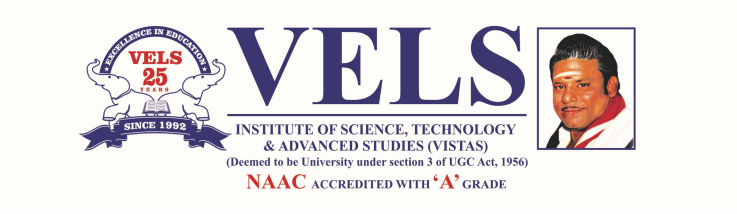


Vels Institute of Science Technology and Advanced Studies (VISTAS) is a multi-disciplinary University offering varied innovative and job-oriented courses in emerging areas. There are 15 Schools and the University offers 55 undergraduate and 37 postgraduate programmes. All major departments offer both M.Phil and Ph.D programmes. The University is NAAC accredited with A grade and several courses are approved by Statutory Regulatory Authorities such as AICTE, BCI, PCI, NCTE and DG Shipping, Govt. of India.

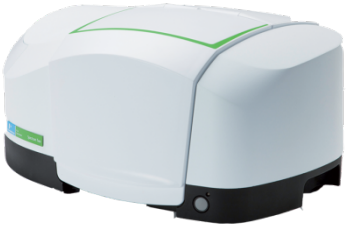
The progress of the nation depends on its sustained growth of education, and research in science and technology. To meet these objectives, VISTAS has been regularly investing towards promotion of research, by setting up Advanced Research Labs in various departments. This has resulted in increasing number of publications in peer reviewed international.

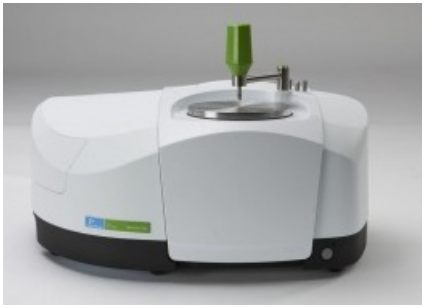
Centre for Advanced Research and Development (**CARD**) has been established to create research promotion, faculty members, research

scholars and students of VISTAS. It aims to discuss comprehend and communicate the fundamental principles in complex physical, computational, biological and social system.

Fourier Transform-Infra Red Spectrophotometer (FT-IR)

Make- ***PerkinElmer***; Model-***Spectrum Two***





mittance Mode

used Reflectance Spectroscopy (DRS) Mode

Spectrum Two FT-IR spectrometers feature

- Standard, high-performance, room-temperature $LiTaO_3$ (lithium tantalate) MIR detector
- Standard optical system with KBr windows for data collection over a spectral range of 8,300 – 350 cm^{-1}

Application

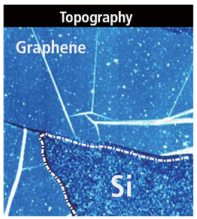
- Chemicals and Materials: Troubleshoot manufacturing problems; identify product contaminants; analyze fuels
- Pharmaceuticals: Analyze product formulations and package coatings.
- Food: Screen for known and unknown adulterants.

Consultancy charges details

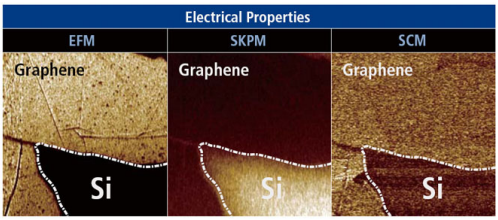
Instrument: Fourier Transform-Infra Red Spectroscopy (FTIR) (Model- Spectrum 2 ; Make- PerkinElmer, USA)	**Internal charges per sample (In Rupees)**	**External charges per sample (In Rupees)**	**Industrial charges per sample (In Rupees**
Attenuated Total Reflectance (ATR) Mode	250	300	700
Diffused Reflectance Spectroscopy (DRS) Mode	300	350	750
Transmittance Mode	350	350	750

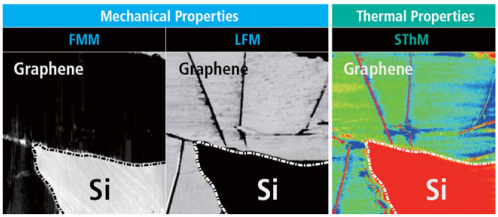
Atomic Force Microscope (AFM)

Make- ***Park Systems***; Model- ***Park XE7***



Sample: Graphene
Scan Size: 15 µm x 15 µm





AFM Principle
Surface Sensing

An AFM uses a cantilever with a very sharp tip to scan over a sample surface. A laser beam is used to detect cantilever deflections towards or away from the surface.

Imaging

An AFM images the topography of a sample surface by scanning the cantilever over a region of interest. The raised and lowered features on the sample surface influence the deflection of the cantilever, which is monitored by the PSPD. By using a feedback loop to control the height of the tip above the surface—thus maintaining constant laser position—the AFM can generate an accurate topographic map of the surface features.

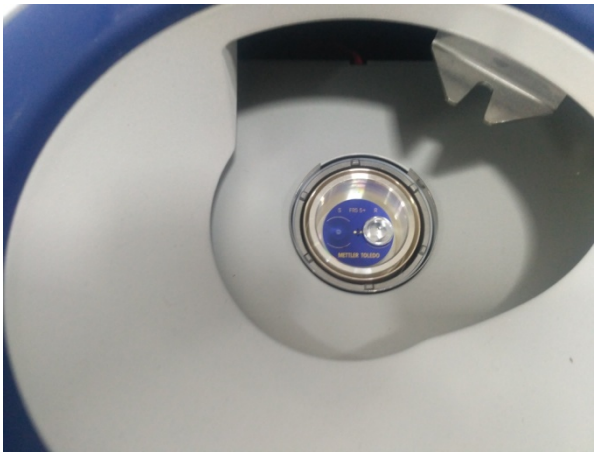
Consultancy charges details

Instrument: Atomic Force Microscope (AFM) Make- Park Systems; Model- Park XE7	**Internal charges per sample (In Rupees)**	**External charges per sample (In Rupees)**	**Industrial charges per sample (In Rupees**
Contact Mode	1500	1750	2500
Non-Contact Mode	1000	1500	2000
Tapping Mode	1000	1500	2000

Differential Scanning Calorimeter (DSC)

Make- ***Mettler Toledo***; Model- ***DSC 3***

DSC Sensor


METTLER TOLEDO

About DSC

Differential scanning calorimetry (DSC) is the most frequently used thermal analysis technique. DSC measures enthalpy changes in samples due to changes in their physical and chemical properties as a function of temperature or time.

Application

-Melting behavior; -Crystallization;-Polymorphism;-Liquid-crystalline transitions;

-Phase diagrams and composition;-Glass transitions;-Reaction kinetics;-Heat capacity;

-Reaction and transition enthalpies; -Curing;-Stability;-Miscibility;-Effects of plasticizers;

-Thermal history;-Heat capacity and heat capacity changes;-Purity.

Consultancy charges details

Instrument: Differential Scanning Calorimeter (DSC) Make- Mettler Toledo, Swizerland; Model- DSC 3+	**Internal charges per sample (In Rupees)**	**External charges per sample (In Rupees)**	**Industrial charges per sample (In Rupees**
Temp from -100° C to +400° C			
Heating only-	1000	1500	2000
Heating and Cooling-	1500	2000	3000

Thermogravimetric Analyzer (TGA)

Make- ***Mettler Toledo***; Model- ***TGA/DSC 3+***

TGA Sensor

Principle

TGA technique measures the mass of a sample as it is heated cooled or held at a constant temperature in a defined atmosphere.

Features and benefits of the TGA/DSC 3+:

- Ultra-microgram resolution over the whole measurement range
- Measure small and large sample masses
- Analyze samples from ambient to 1600 °C

Application

- Quantitative content analysis
- Kinetics of decomposition processes
- Sublimation, evaporation and vaporization
- Thermal stability
- Oxidation reactions and oxidation stability
- Determination of Curie temperatures

Consultancy charges details

Instrument: Thermogravimetric Analyzer (TGA) Make- Mettler Toledo, Swizerland; Model- TGA/DSC 3+	**Internal charges per sample (In Rupees)**	**External charges per sample (In Rupees)**	**Industrial charges per sample (In Rupees**
Temp from -100° C to +400° C Heating only-	1000	1500	2000

Confocal Raman Imaging & Spectrometer

Make- ***WITec, GmbH***, Model- ***Alpha300 R***

Confocal Raman Microscope

Confocal Raman Spectrophotometer

Laser Source

Key Features

- Confocal Raman Imaging with unprecedented performance in speed, sensitivity, and resolution
- Outstanding depth resolution ideally suited for 3D image generation and depth profiles
- Ultra-fast Raman imaging option with under one millisecond integration time per spectrum
- Non-destructive imaging technique: no staining of fixation of the sample required specifications

Raman General Operation Modes

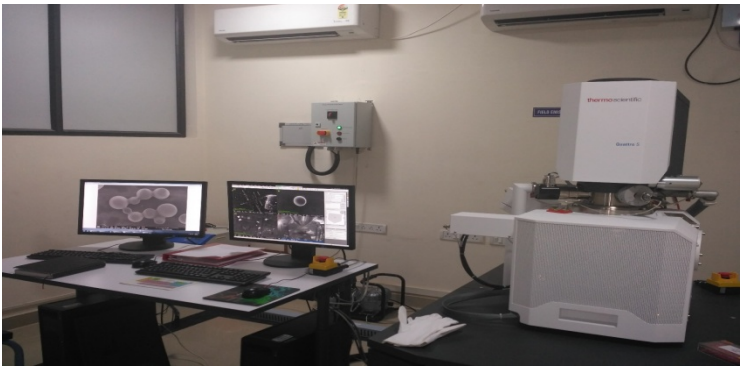
- Raman spectral imaging: acquisition of a complete Raman spectra at every image pixel
- Planar (x-y-direction) and depth scans (z-direction) with manual sample positioning
- Image stacks: 3D confocal Raman imaging
- Single point Raman spectrum acquisition with depth profiling

Consultancy charges details

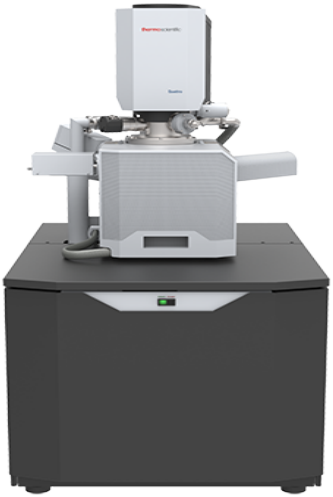
Instrument: Confocal Raman Imaging & Spectroscopy Make- WITec, GmbH, Model- Alpha300 R	**Internal charges per sample (In Rupees)**	**External charges per sample (In Rupees)**	**Industrial charges per sample (In Rupees**
Spectral imagining (2D)	1500	2000	3000

Field-emission scanning electron microscopy and Energy-dispersive x-ray analysis(FESEM-EDS)

Make- ***FEI, ThermoFisher Scientific***;Model-***Quattro S***



Field-emission scanning electron microscopy



About Quattro S FESEM

Quattro environmental scanning electron microscope (ESEM) is a versatile, high-performance instrument with a field emission gun (FEG) for excellent resolution and beam current stability.

Three vacuum modes (high vacuum, low vacuum, and ESEM) provide the flexibility to accommodate the widest range of samples of any SEM available, including samples that are outgassing or otherwise not vacuum-compatible. Quattro environmental scanning electron microscope (ESEM) is a versatile, high-performance instrument with a field emission gun (FEG) for excellent resolution and beam current stability.

Consultancy charges details

Instrument: Field-emission scanning electron microscopy and Energy-dispersive x-ray analysis (FESEM-EDS) Make- FEI, ThermoFisher Scientific; Model-Qattro S	**Internal charges per sample (In Rupees)**	**External charges per sample (In Rupees)**	**Industrial charges per sample (In Rupees**
FESEM imaging alone (5 images)	1200	1500	3000
FESEM imaging with EDS spectra	1500	2000	5000
FESEM imaging with EDS spectra and color mapping	1750	2500	6000

BET Surface Area Analysis

Make- ***Microtrac BEL;*** Model-***BETSORP Max***

BET Surface Area Analyser

BET Surface Area Analyser

Sample Degaser

About BELSORP-max BET Surface Area Analysis

The BELSORP-max is designed for wide range adsorption isotherm for surface area and pore size distribution analysis. It can measure adsorption isotherms from relative pressure as low as 1 x10-8 (N2 at 77K, Ar at 87K), using a 13.3Pa pressure transducer.

Key Features:

- Specific surface area, pore size distribution, vapour adsorption and chemisorption (OP) can be measured
- Fully automated chemisorption option is available.
- Kr adsorption is available for low surface area material.
- Collant level controller is no longer necessary and high reproducible data can be obtained

Consultancy charges details

Instrument: BET Analysis (Model BETSORP Max; Make- Microtrac BEL, Japan)	**Internal charges per sample (In Rupees)**	**External charges per sample (In Rupees)**	**Industrial charges per sample (In Rupees**
Surface Area Analysis	1500	2000	4000
Absorption/Desorption isotherm study	2000	2500	5000

Dynamic light scattering (DLS)

Particle Size/Zeta potential Analyser

Make- ***Microtrac Inc;***Model:***Nanotrac Wave II***

DLS Particle Size/Zeta potential Analyser


Microtrac
Nanotrac Wave II

About Nanotrac Wave II DLS

The Nanotrac Wave II is the newest generation of sub-micron particle size and zeta potential analyzers. The innovative design of the Nanotrac Wave II offers faster measurements with reliable technology, particle size measuring to below 0.8 nm, higher precision and accuracy, all of this combined in a compact Dynamic Light Scattering Analyzer without moving optical components.

The measurement principle of the Nanotrac series is based on Dynamic Light Scattering (DLS) in a 180° Heterodyne – backscatter arrangement.

Zeta Potential Range

Able to measure Zeta potential closer to isoelectric point by eliminating errors caused by electro-osmotic flow. ZP measurement ranges from -200 to +200mV, repeatability +/- 1 mV in zeta potential(related to PS Latex standard particles 150 to 500 nm)

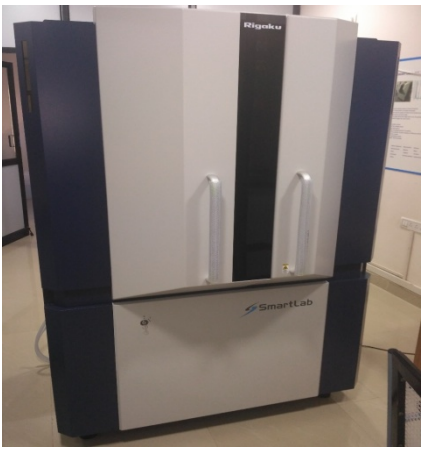
Consultancy charges details

Instrument: DLS Analysis (Model Nanotrac Wave II; Make- Microtrac Inc, USA)	**Internal charges per sample (In Rupees)**	**External charges per sample (In Rupees)**	**Industrial charges per sample (In Rupees**
Particle Size	800	1000	2000
Particle Size/Zeta potential	1000	1500	3000

Powder X-ray Diffractometer (XRD)

Make- ***Rigaku***;Model-***SmartLab SE X-Ray***

X-ray Diffractometer



About SmartLab SE X-Ray XRD

This new X-ray diffraction system features HyPix-400, a semiconductor hybrid pixel array detector that was specifically designed for multipurpose X-ray diffractometers. Its large active area, high angular resolution and ultra-high dynamic range make it the perfect, affordable, 2D detector solution for a large variety of applications, including powder and thin film diffraction. The D/teX Ultra 250 silicon strip detector is also available as a standard detector choice if desired.

Key Features:

- SmartLab Studio II software based on a new architecturally integrated modular platform
- Cross-beam optics module switches between Bragg-Brentano and parallel beam without the need to change optics.

Consultancy charges details

Instrument: Powder X-ray Diffractomter (XRD) **Model- SmartLab SE X-Ray; Make-Rigaku, Japan**	**Internal charges per sample (In Rupees)**	**External charges per sample (In Rupees)**	**Industrial charges per sample (In Rupees**
5-100 scan range (10 scan speed)	400	500	1000

High performance thin layer chromatography (HPTLC)

Make-***Camag***; Model- ***Linomat 5, TLC Scanner 3***

TLC Scanner

TLC Developer

About Camag HPTLC

High-Performance Thin-Layer Chromatography (HPTLC) is the most advanced form of TLC and comprises the use of chromatographic layers of utmost separation efficiency and the employment of state-of-the-art instrumentation for all steps in the procedure: precise sample application, standardized reproducible chromatogram development and software controlled evaluation.

Application

- Identification , Stability tests , Detection of adulteration , Assay of marker compounds, etc, Quality Control, Additives, Food contaminants, Stability tests, Process development and optimization
- Process monitoring, Cleaning validation, Detection of document forgery, Dyestuff analyses

Consultancy charges details

Instrument: High performance thin layer chromatography (HPTLC) Model- Linomat 5, TLC Scanner 3 ; Make- Camag, Swizerland	**Internal charges per sample (In Rupees)**	**External charges per sample (In Rupees)**	**Industrial charges per sample (In Rupees**
(Qualitative Analysis)	2000	3000	3000
(Quantitative Analysis)	3000	5000	5000

Real Time Polymerase Chain Reaction (RTPCR)

Make-***Applied BiosystemsThermoFishier Scientific***;Model -***StepOne***

About RTPCR

Real-time quantitative PCR is the reliable detection and measurement of products generated during each cycle of the PCR process which are directly proportional to the amount of template prior to the start of the PCR process

Key Features

The StepOne system features VeriFlex Block technology, which combines six independently controllable Peltier blocks for enhanced PCR functionality and precise temperature control. It perform Fast PCR reactions in less than 40 minutes.

Applications

- SNP Genotyping
- Gene Expression Analysis
- MicroRNA Expression
- Translocation Analysis
- Gene Detection
- Viral Load Analysis

Consultancy charges details

Instrument: Real time polymerase chain reaction (RTPCR) Model - StepOne; Make- Applied Biosystems, ThermoFishier Scientific	**Internal charges per sample (In Rupees)**	**External charges per sample (In Rupees)**	**Industrial charges per sample (In Rupees**
Analysis	1000	1500	3000

Battery Tester (88 Channels) and Glove Box

Glove Box

Battery Tester

The CT2001 series Battery Testing Systems are designed for energy storage materials research and battery test. The eight channels are independently programmed and controlled by the computer. The Current ranges are from 1 mA to 5 A and Voltage ranges from 2V to 15V. The control software comes with a friendly interface, which allows new users to operate with minimal training if the customer has some electrochemical background. Data Process

software shows different kinds of plots in specific cycles (Voltage vs. Capacity, Capacity vs. Cycle Number, Efficiency, etc.), which can be exported with simply “Copy” and “Paste”.

Features:

- High-precision channels designed for electrochemical materials research and Battery charge/discharge test.
- 8 independence channels. Each can be set as Constant-Current (CC) Discharge, Constant-Current (CC) Charge, Constant-Voltage (CV) Charge, etc.
- Independent current source and voltage control for every channel.
- Data automatically backed-up.
- Full safety protection for all the channels.
- Capable to control up to 20 analyzers (160 Channels) with one computer.

SPS VISTAS Drug Testing Lab

UV Spectrophotometer (Shimadzu)

GEL DOC Scanner

VISTAS had established, “VISTAS SPS LAB”, a Government authorized organization in the fields of Analytical Testing of Pharmaceuticals, Cosmetics and Ayurveda. This lab is also engaged in offering analysis and Industrial Testing Services.

Thrust Areas

Analytical and research services for

- Pharmaceuticals
- Biotechnology products
- Fine chemicals and
- Other substances using a variety of spectroscopic, physicochemical and theoretical techniques.

Services Offered

- The services are offered by us includes Chemical Analysis,
- Physio-Chemical Analysis
- Instrumental Analysis
- Spectroscopical studies like UV-visible spectrophotometer, FTIR, Fluorescence, Polarimetry
- Chromatographic and Electrophoretic studies

Pharmaceutics Machine Lab

Tabulating Machine

Granulation drying sieving punching of tablets

The machine lab of Pharmaceutics Department is catering the needs of pharmacy students by providing hands-on experience of industrial prototypes of the machineries used.

Thrust Areas

The development of formulations like tablets, capsules, ointments, creams, lotions, and parenteral are engaged.

Facilities

Facility available for formulating the tablets like weighing, grinding, mixing, granulation drying, sieving, punching of tablets, and coating of tablets.

Facility for filling of powders / granules in hard gelatin capsule shell is available. The machine room has the facilities to wash ampoules, filling the injections, and heat sealing of the ampoules.

Extensive facilities are available to carry out the preparation of semisolids like ointments, creams, pastes and metered filling in collapsible tubes. Apart from this, basing operations like milling, grinding, mixing, heating, weighing, sieving, and drying etc., are available.

Fish Immunology Lab

Bleeding of fish

Fish keeping facility

With the global fish production through capture fisheries, reaching its maximum due to over exploitation, a major source of food/dietary protein for the teeming millions of people in the new century, we must turn to the aquaculture.

Present aquaculture production has almost surpassed that of capture fisheries. At least 50% of the fish consumed by humans are farm- reared. India has the potential for farming of fish, many more times of what it is actually producing.

Thrust areas for research

Developing the environment-friendly prophylactic, and therapeutic immune-stimulants, which are taken from terrestrial and marine plants, for culturing fish.

Heavy metal-induced immune-suppression in fish and this aspect has relevance to extensive cultures in large water bodies which are more often receive polluted water from rivers, and canals, which are polluted by industrial effluents.

Stress induced Immune modulation due to physical and social stressors (e.g. Overcrowding, All-male culture etc.,) is another priority area of research in this centre.

Centre for Energy Research and Alternate Fuels

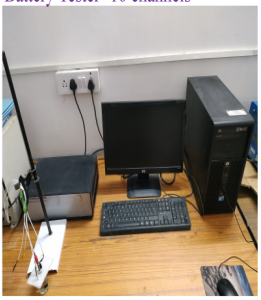
Electrode Fabrications

Battery Fabrications –Glow Box

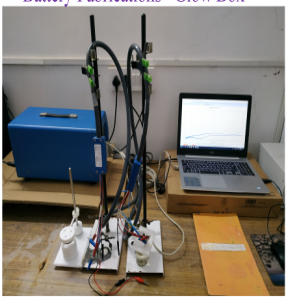
Coin Cell Fabrications

Battery Tester -16 channels

Battery Tester -88 channels



CH Instruments



Bio-Logic Instruments

DRS –UV Spectroscopy

Established in 2016, the Centre for Energy Research & Alternative Fuels (CERAFs) distinguishes itself through excellence in basic and advanced research directed towards outcomes of high industry relevance, with focus on system-level research

Technology and Product development at CERAFs

Key research areas of the CERAFs are

(i) Development of carbon nano sheets from hemp fibre.

(ii) Development of nano porous carbon from waste tire powders and plastics

(iii) Fundamental study of sodium-ion battery

(iv) Fundamental study of Fuel cell super capacitors

(v) Fundamental study in mitigating dendrite growth in Lithium-ion batteries

(vi) Development of novel electrode materials for lithium-sulfur and aluminum-ion batteries

Central Computing Lab

Central Computing Research Lab

Network Simulation Software

The school of computing sciences had established with the usage of the following tools for research activities.

Thrust Areas

In VISTAS, the researchers are using the **Matlab** for doing research in medical image processing and applications.

Weka is an open source tool, which is used for data mining techniques and applications

The current researchers in VISTAS are **utilizing R tool** for big data and analytics.

Orange is an open-source data visualization, machine learning and data mining tool kit. The researchers feed the selected subset into other widgets using Orange tool.

Network Simulation (NS) provides simulation for routing, and multicast protocols for both wired and wireless networks. It is as used network simulator for TCP research.

Python is used for developing desktop, GUI applications, websites, and web applications. .

IBM-Business Analytics Lab

Training Program on Business Analytics

IBM- Business Analytics Lab

In VISTAS, computing infrastructure offers a truly heterogeneous range of hardware and software platform for the students to appreciate and gain wide-ranging experience. Our lab is fully equipped with all necessary facilities to make the student as a qualified system professional.

Thrust Areas

- Being a Master in Business Analytics is the solution for the increasing demand for complex data analysis to solve business-related problems.
- The students will be trained in Business Analytics and familiarized with Data Analysis tools, so that they can perform and become familiar predictive modeling.
- Analyzing past performance of the company, and making a strategy, how it will perform in future, and take business decision accordingly.
- Establishment of a full-size lab, which can handle the capacity of large number of students at a time and allocate sufficient financial resource in the budget every year for software purchase, license renewal, etc.

Artificial Intelligence Lab

Experimental Testing of subjects during night time driving

Artificial Intelligence Research Lab Setup with 40 Channel Data Acquisition System and Driving Simulator

Artificial Intelligence Research Lab is a research and development initiative established at VISTAS, funded for the project 'Development of an Intelligent Driver Hypo-vigilance System' by Science and Engineering Research Board (SERB), Department of Science and Technology, Government of India (SERB/F/3759/2016-17).

Objective

This research lab is equipped with a custom-built driving simulator and facilities to acquire behavioral data (Camera) and physiological data (EEG, ECG, EOG) corresponding to driver's driving state.

This interdisciplinary research lab focuses on investigating a broad range of issues, extending from the underlying mechanisms of physiological signals, to varied biomedical signal and image processing issues.

The research being conducted provides an excellent mix of multiple disciplines, thus providing a good forum for engineers, scientists, medical professionals and service users to exchange ideas and develop new research ventures.

IBM-Cloud Computing Lab

IBM Cloud Computing Research Lab

IBM Cloud Computing Research Lab

IBM Cloud Computing Lab is equipped with 25 numbers of HP System i5 (4300) systems configured with Intel Core i5 @2.90GHz Processor, 8 GB RAM, 500 GB Hard disk, installed with software like Java (JDK 7), IBM Bluemix Cloud Platform, VMware, ESXi 6.0, VSphere Client, Windows Virtual PC, VMware Workstation 12.

IBM and VISTAS collaborate with the IBM Career Education program, which includes SEED (Faculty Development Training Program initiative as Software Engineering for Educational Development), CEBT (Career Education for Business Transformation-a training program to provide multi-disciplinary skills to students and faculty members).

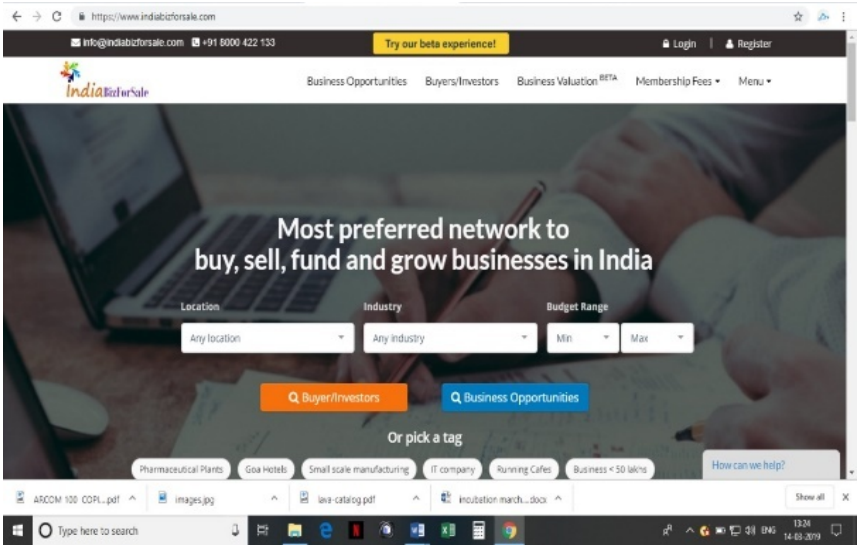
BlueMix is a Platform as a Service (PaaS) offering IBM based on open standards and cloud to build, deploy, manage, and run omni-channel applications like web and mobile, big data and other smart services.

Thrust Areas

This research Lab focuses on various specialty areas like Cloud, Big data, Analytics, Mobility etc. to conduct independent research by faculty members and research scholars.

Incubation Centre

Vels Incubated Product



VISTAS Technology Business Incubation Centre (VTBIC) has embarked on nurturing innovation and entrepreneurship. Our focus area includes Automations, IoT, Artificial Intelligence and ICT.

Apart from companies, we also encourage faculty start up and have a separate student lounge to encourage their innovations.

We offer consultancy in IP rights and licensing, Technology scouting and designs. Reprography and cafeteria facilities are also available.

Objective

Two separate Centers, Centre for Automation and Power Conservation and Centre for IOT in Road Safety and Health Care also function inside the VTBIC which is in collaboration with incubated companies.

VTBIC has created 40 jobs so far and has also trained several students from VISTAS with hands-on industrial exposure.

One of a notable product from VBTIC “Arcomm ATM Auto Controller” developed from faculty startup is highly acclaimed and appreciated by nationalized banks like State Bank of India and Indian Bank. It is commercialised in over 1200+ ATMs.

Multimedia Lab

Multimedia research Lab

Multimedia Research Lab with 2D Animation

Multi Media Lab is fully dedicated for Graphic Design, Website Design, and 2D Animation equipped with 39 numbers of highly advanced computers.

Computers are updated as per requirements in each and every quarter of semester. LCD Projector gives quality screen duplication, which makes the students clear understanding over the subject, which the faculty members elaborate.

Multi Media Lab is well equipped with 30 high end computers.

Thrust Areas

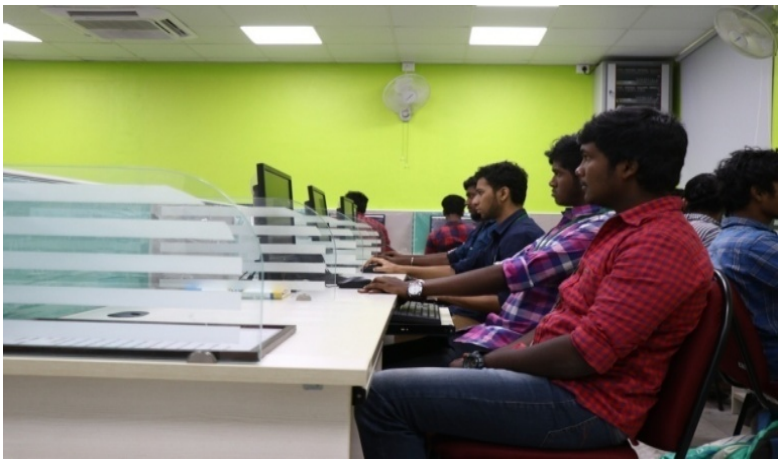
Students will work on all kind of Graphic Designing, 2D Animation, Web Designing using this collection and several Adobe applications includes

- Adobe CC Master Collection
- Photoshop
- Illustrator
- In Design
- Dream weaver
- Flash
- After effects

Animation Lab

Animation Research Lab

Animation Lab Setup with 2D Animation



Animation Studio is a fully dedicated studio for 3D Animation and visual effects with highly advanced computers, which can provide high quality renders output.

Thrust Areas

Autodesk 3ds max

Students will work on 3D architectural design, using this software with the help of CAD

Autodesk Maya

Students will work on 3D Character Design, Animation, Dynamics, rendering for Animation movies, Short film, AD Films etc.,

Nuke

Students will work on a node-based digital compositing application developed by The Foundry, and used for television and film post-production.

SilhouetteFX

Students will work on advanced Rotoscopytool for the visual effects industry in post-production area.

Adobe CC Master Collection

Students will work on Photoshop, Illustrator, Indesign, Flash, Premier, Dreamweaver and After Effects.

Advanced Training Restaurant

Food and Beverage Service

Food Service

Regardless of a restaurant's size or style, the serving staff represents the face of every dining establishment. These individuals will interact the most with guests during a visit, and positive interactions can go a long way towards ensuring those same patrons return.

The Basic training restaurant serves as the training arena, which will help establish to effective, knowledgeable students, and is the focal teaching centre for all hotel management students.

Thrust Areas

The Basic training restaurant focuses on the following training aspects.

- Welcome and greet guests
- Inform guests of specials and menu changes.
- Make recommendations and up-sell effectively.
- Answer questions about our food, beverages and other restaurant functions and services.
- Take food and beverage orders from guests.
- Enter orders in the POS system.
- Deliver food and beverages from kitchen

Advanced Training Kitchen

Advanced Training Kitchen

Dish Preparation in Advanced Training Kitchen

The Advance Training Kitchen training is used primarily, to introduce the art of cooking. It is, where the budding professionals are fine tuned to prove their mettle in the industry. Having mastered the basics, the students move on to specialization in the art of cooking.

The training will allow them to learn the skills and knowledge that are required of a chef in the kitchen, which includes not only knowing how to cook but also how to create new dishes, how to keep the

kitchen safe, how to run the kitchen efficiently and more.

This kitchen boasts of state of art equipment & hotel kitchen simulation. Elaborate dishes are prepared here.

The cuisines under consideration are Indian, Oriental, Continental, Chinese, Mexican, Japanese, Thai**,** Arabic, Italian and Spanish.

Thrust Areas

Advanced equipments with international preparations, and the requirements of plating and showcasing, the talent of food display are very well taught in this kitchen.

Ship Model based Research

Ship Model

Machinery and equipments of a ship

SHIP IN CAMPUS Available at School of Marine Engineering

Maine Engine: AkaSaka
Model: 6-Cylinder 4-stroke Diesel Main Engine, rated at 2200hp, at 250 rpm
Installation: 2005
Installation Cost: Rs 6 Crores (approx)

The Ship in Campus module is meant for training of the maritime candidates, with an aim of providing them with an environment as close to the actual conditions.

The Ship-In-Campus is a very high tech lab. The entire machinery and equipments of a ship including propeller, steering machinery and rudder etc. are taken out and installed inside a steel hull in the campus.

The training given inside this ship-in- campus, familiarized with the actual working of the engine room machinery, and equipments of a ship but, also get hands-on experience on them.

Further, students learn all the safety and emergency procedures to be followed on board as in on a ship including fire fighting etc. and the equipments includes Maine Engine, Auxiliary Engines, Boilers, Purifiers, Compressors, Incinerator and Various Ship Engine Room pumps.

Bridge Simulator based Research

Simulation training in realistic environments

Bridge Simulator training

Make: Konsberg
Model: Polaris V
Installation: July 2007
Installation Cost: Rs 96 Lakhs

The latest maritime simulation technology provides impressive 3D-graphics to depict true-to-life vessel models and exercise areas, ensuring quality simulation training in realistic environments and real life ship handling situations.

Full mission bridge simulator is having 6 degrees of freedom motion capabilities. A total of 20 ship models are available for use in full mission bridge simulator.

Full mission bridge simulator helps to notice the variable drift due to wind and current, squat, bank and interaction effects, grounding, various amounts of fog, rain, snow and ice.

Bridge Simulator training is to achieve Real equipment know-how, Regulatory understanding, Operational experience, External interfaces, Visualization, E-learning, User interface, Hydrodynamics, Training & Exercises and Assessment & Evaluation

The Full mission Bridge simulator has the ability to capture new knowledge and to transfer it to trainees of the maritime industry.