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UNIVERSITY OF MYSORE

VIJNANA BHAVAN

Manasagangotri, Mysuru- 570 006

Vision

To be a leading research facility involving academic activities that provides a transformative education to create leaders and innovators, generating new knowledge for society and industry.

Mission

- To provide infrastructure and facilities to meet the latest technological needs.
- To create an ambience in which new ideas, research and scholarship flourish, and from which leaders and innovators of tomorrow emerge.
- To promote research culture among students, researchers and faculty through projects and consultancy.
- To establish "Centres of Excellence" through active interaction with industry.
- To collaborate with other academic and research institutes around the world to strengthen education and research ecosystem by providing an understanding of the needs of society and industry.

Genesis

The *Vijnana Bhavan* is a central instrumentation facility of the University of Mysore and house for major projects like Institution of Excellence (IOE), University with Potential for Excellence (UPE), Centre with Potential for Excellence in a Particular Area (CPEPA) and Department of Science and Technology- Promotion of University Research and Scientific Excellence (DST-PURSE).

Institution of Excellence (IOE)

The University of Mysore was identified as an "Institution of Excellence" by the Government of India in 2008 to create a "Centre of Excellence" in multidisciplinary research activities and foster overall development of the University. A grant of Rs.100 crores by Ministry of Human Resource Development (MHRD), Government of India elevated the University to the status of Institution of Excellence in the thrust area of Bio-diversity, Bio-prospecting and Sustainable Development. This IOE program is multidisciplinary involving expertise from disciplines such as Anthropology, Biochemistry, Biotechnology, Botany, Chemistry, Earth Science, Economics, Microbiology, Molecular Biology, Physics, Sericulture, Zoology, Political Science and Sociology. The Institution of Excellence is a prime productive research and houses core instrumentation facility such as NMR, NGS, LCMS, XRD, SEM and animal cell culture facility at Vijnana Bhavan.

University with Potential for Excellence (UPE) and Centre with Potential for Excellence in a Particular Area (CPEPA)

The University of Mysore has a long established tradition to carry out interdisciplinary and trans-border research involving several departments. The University Grants Commission (UGC) has sanctioned Rs.50 crores considering the University of Mysore as University with Potential for Excellence (UPE) in 2012, for a period of five years and extended it for one more year. In addition, the University has also received Rs.9.5 crores from UGC under the banner "Centre with Potential for Excellence in a Particular Area (CPEPA) for an interdisciplinary program involving selected science departments to work on Nano-science and Nanotechnology.

The University has projected a frontier areas of research in Materials Science on "Processing, Characterization & Applications of Advanced Functional Materials" as its Focused Area I and "Media and Social Development: A Case study of Karnataka" as its Focused Area II under UPE scheme. The following facilities were established under this scheme - High Performance Computing Environment (HPC), adoption of green technology in the University campus, centre for education of visually challenged - Drushtee, multimedia learning resource creation centre (MLRCC), earn while you learn scheme, workshops, conferences and seminars, centre for proficiency development, upgradation of printing and publication units, books and journals, sports and games, strengthening of department laboratories, hostels and e-governance.

Department of Science and Technology- Promotion of University Research and Scientific Excellence (DST-PURSE)

The University has been identified as one of the top 20 Universities in Scientific publications and was awarded Rs.9.00 crores under DST-PURSE Scheme, and renewed for 2nd Phase in 2016 with an award of Rs.8.5 crores. DST-PURSE project includes two major components: "Strengthening capabilities and supporting networks by building physical infrastructure and creating an ambience for academic ecology" and "Development of molecules and materials for sustainable technology". The facilities established under DST-PURSE houses Analytical and preparative HPLC, Gel permeation chromatography, Mass spectrometry, Cell sorter, Flow Cytometry, Gel-Doc, UV-visible, etc.

More than 25,000 researchers, students and eminent scientists have visited the facility from different states, federal & international academic universities & industries.

Auditorium Facility

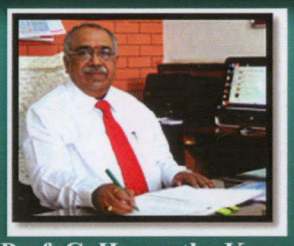
Auditorium

Seminar Hall

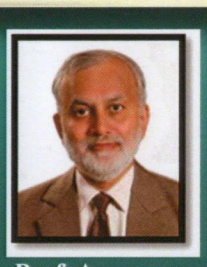
Board Room

e-Lounge

Advisory Committee

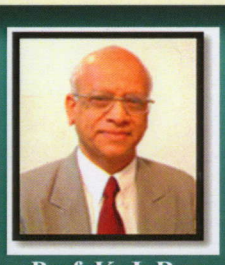


Prof. G. Hemantha Kumar
Hon'ble Vice Chancellor

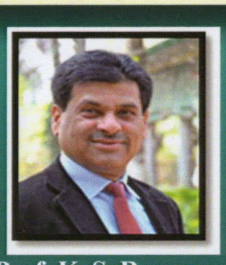


Prof. Ayyappan
Former DG, ICAR

Prof. S. N. Hegde
Former VC, UOM

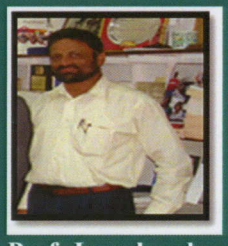


Prof. K. J. Rao
IISc



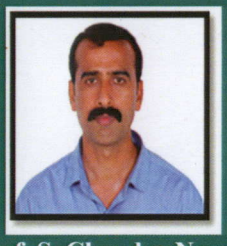
Prof. K. S. Rangappa
Former VC, KSOU & UOM

Prof. S. Chandrasekar
Director, IICT



Prof. Jayachandra
JNCASR

Prof. Kabilan
Annamalai Univ.

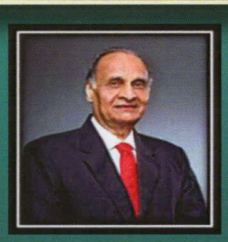


Prof. S. Chandra Nayaka
Coordinator, Vijnana Bhavan

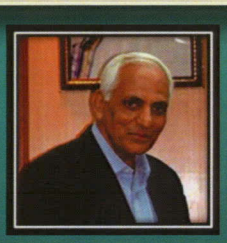
Adjunct Professor

Dr. Srini Kaveri
Director of Research
National Centre for Scientific Research
French Ministry of Education and Research, France

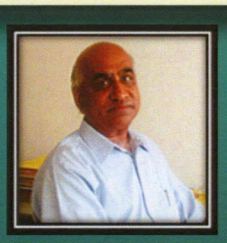
Distinguished Professors



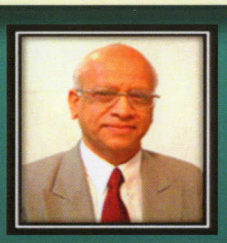
Prof. Goverdhan Mehta
IISc



Prof. T.P. Singh
AIIMS

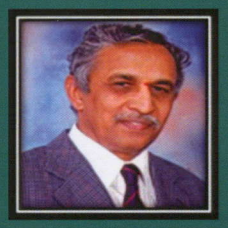


Prof. T.V. Ramakrishna
BHU/IISc

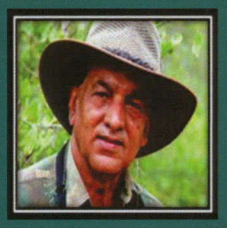


Prof. K. J. Rao
IISc

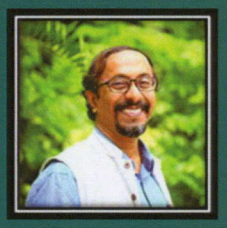
Prof. K. S. Rangappa
University of Mysore



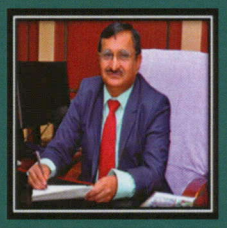
Prof. H. A. Ranganath
IISc



Prof. Mewa Singh
University of Mysore



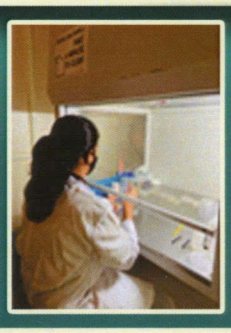
Prof. Tapas K Kundu
CDRI

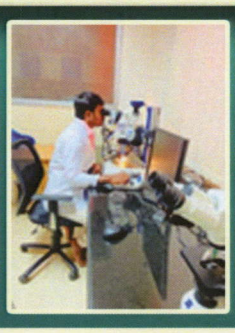


Prof. M. K. Surappa
Anna University

Prof. S. R. Niranjana
University of Mysore

Research Laboratories





Major Equipment

Nuclear Magnetic Resonance (NMR) (Agilent)

The direct digital receiver digitizes at 400MHz, delivering outstanding dynamic range, sensitivity, and rock solid baselines across myriad applications. The DD2 console was redesigned for improved performance and ease-of-use, and now incorporates VT (variable temperature, from ambient to +130°C) support in the standard console.

Single Crystal X-ray Diffractometer -Bruker X8 Proteum

It includes optics, low temperature devices, and sample changing robotics. Source and type of X-ray generator: Cu-rotating anode X-ray generator. Wavelength: 1.5418 Å, Detector: Photon.
Cryounit: Oxford Cryostream 700 series.
Powder X-ray Diffractometer – Rigaku, Japan
Model: SmartLab 3Kw and S.No. BD63000074

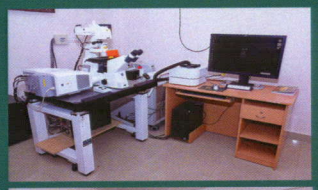
Mass Spectrometer

An ESI/APC-Hybrid Quadrupole, Time-of-Flight MS-MS (Synapt G2, Waters) is available which is integrated to LC, MALDI and GC.

Instrument Name	Make	Model
UPLC	Waters	Acquity
GC	Agilent	7890A
MS	Waters	SynaptG2

Scanning Electron Microscope (SEM)

Zeiss Germany: EVO LS 15
Hitachi HighTechnologies Corporation, Japan
Model: S-3400N, S. No. 341351-03
SEM with EDS test process that scans a sample with an electron beam to produce magnified image for elemental analysis.



Laser Scanning Confocal Microscopy

Zeiss LSM710: The Carl Zeiss Inc LSM710 has three fluorescence and one transmitted light detector. The LSM710 is particularly good for dim or
photo-bleachable samples. Probes such as YFP and mCherry can be imaged using this instrument.

Liquid Nitrogen Plant: M280X2
Kelvin International Corporation, USA

A total 240 liter vacuum insulated Stainless Steel Dewar tanks stores the daily production of 80-100 liters with purity ranging from 99 to 99.996%. Integrated within the enclosure are an oil-free scroll air compressor and PSA LN2generator.

AXIO Imager A2 M Fluorescence and Transmitted light

Filters: DAPI-absorption maximum at a wavelength of 358 nm (ultraviolet) and its emission maximum are at 461 nm
FITC: FITC has excitation and emission spectrum peak wavelengths of
approximately 495 nm/519 nm
Bright field: both reflected and transmitted properties available.

Analytical and Preparative HPLC

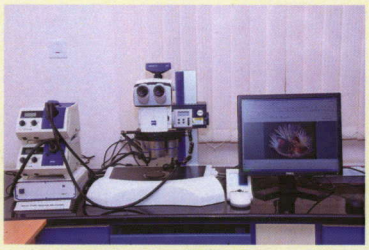
Waters Xevo G2-XS QTof, USA
HPLC is used to separate and refine high-purity target compounds from a mixed solution after a synthesis reaction or from natural extracts.

Sequencing Facility

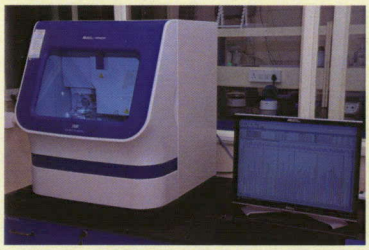
Ion Torrent ProtonTM: Life Technologies, USA
Ion PGM: Life Technologies, USA
Capillary DNA Sequencer: Applied Biosytems, USA
An 8-capillary based genome sequencer (AB3500 Genetic Analyser) - is a fluorescence based DNA analysis machine which uses capillary electrophoresis technology.
Ion one Touch2 Instrument and Ion ES InstrumentResearch areas: Cancer, Genetic disorders, Agriculture, Epigenetics, Inherited disease research, Microbial genomics, Stem cell research, Metagenomics, and Forensic sciences.

Major and Minor Equipment

Polarizing Microscopy:
ZEISS AXIO Imager A2M



Stereozoom Microscope



Cappilary DNA Sequencer

Gel Documentation System

Chemi Doc

Gel Permeation
Chromatography

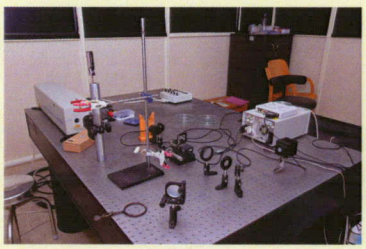
Cell Culture Facility

Inverted Microscope

Bio-analyzer

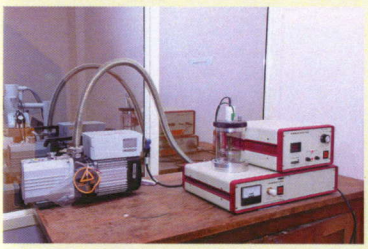
Viscometer

Electrochemical Analyzer

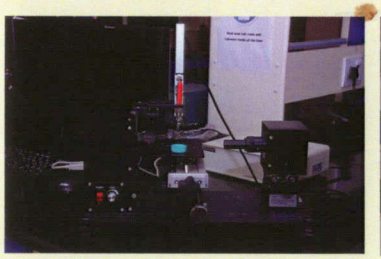


NLO System

Desktop CVD



Sputter Coater



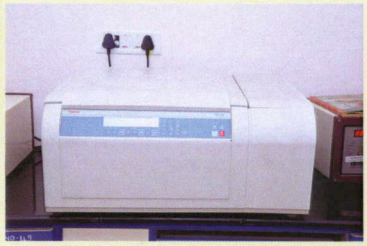
Contact Angle Analyzer

BET Surface Area Analyzer

Laser Raman Spectroscopy

Atomic Force Microscope (AFM)

UV-Visible Spectrophotometer



Refrigerated Centrifuge

Vacuum Concentrator

DSC and TGA

Fourier-Transform Infrared Spectroscopy

Cell Sorter

Ultra-Centrifuge

Training Programme

Vijnana Bhavan is offering short term training programmes for Professors, Scientists, Research Scholars and Post-graduate students. The Short-term Training Program focuses on considerable strengths and diversity of multidisciplinary research, providing a meaningful experience in research training and careers.

Training facilities include, well-equipped research laboratories and teaching aids. The program is designed to teach contemporary research techniques and enhance essential laboratory skills; the large number of scientists participating in this program afford students the opportunity of placement in a laboratory related to their interests. The laboratory experience comprises detailed coverage of those fundamental basics which are crucial for successful performance in any research laboratory.

Formal teaching sessions are designed to cover materials which are highly integrative and coupled to recent research findings and areas of activity. Combining research activities, students will gain a better grasp of research concepts and improve their critical thinking with regards to literature and their own studies. During this program, students will also participate in Workshops on Ethics in Research and Opportunities (Careers) in Research. At the end of the training program, the students present their research work to the other students and faculty in the mode of scientific meeting.

Regular Short-term Courses

The Program employs a Concept Oriented approach in training participants in various Fundamental and Applied aspects of Sciences. The Program uses Didactic Lectures, Interactive Discussions and Demonstration Practical sessions to make the participants understand the idea behind the theories.
Duration: 10 Working days Tentative schedule: March through June each year
Eligibility: Students enrolled for any Post-Graduate Program in Biological/chemical/physical/Materials Sciences or Higher.
Mode of Admission: First come first serve basis.

Short Term Research Internship Program (STRIP)

The Short Term Research Internship Program offers short-term (4-6months) research opportunities primarily to students who require completing dissertations for the partial fulfillment of their Bachelor and Master degrees. Selected candidates get to work on projects encompassing various multi-disciplinary areas of Biological/Chemical/Physical/Materials Sciences.
Duration: 4-6 months
Tentative schedule: January through June (batch 1) and July through December (Batch 2) each year.
Eligibility: Candidates pursuing B.Sc, B.Tech, M.Sc, or M.Tech degrees in any branch of Biological/Life/Chemical/Physical/Materials Sciences.
Mode of Admission: Submission of SoP along with the application followed by MCQ based Entrance Test. Selected candidates are called for personal interviews.

Other Workshops and Courses

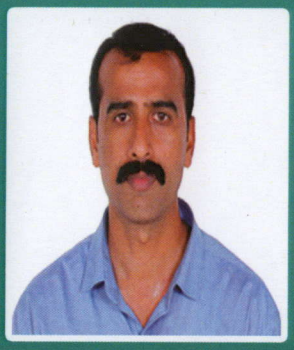
Workshop on "Handling of the Scientific Equipment"

The courses are focused on theoretical as well as practical concepts in the field of scientific equipments that will help in sharpening knowledge from basics to recent findings. Workshop includes lectures and demonstrations which are helpful to students for sharpening their knowledge of equipments as well as for their postgraduate curriculum and research.
Duration: 3-5 days
Eligibility: Postgraduate students, research fellows, teachers and scientists.
Mode of Admission: First come first serve basis.

Workshop on "Principle and Practices of Laboratory Animal Care"

The hands-on course focuses on the concepts of principle and practices of laboratory animal care in invivo experiments and its wide applications in the field of research as well as ethical issues, welfare regulations of animal experiment.
Duration: 2 days
Eligibility: Students whose are studying / have passed their B.Sc/B.Tech/M.Sc/M.Tech degrees in any branch of Biological/Life/ Sciences from any recognized university.
Mode of Admission: First come first serve basis.

STAFF PROFILE



1. **Dr. S. Chandra Nayaka** M.Phil.,Ph.D.
Designation: Professor (ICAR) and Coordinator
Specialization: Microbial Biotechnology & Agricultural Biotechnology
Awards and Honours: 25
- Best Scientist Award, ICAR, Govt of India (2020)
- The Millennium Plaques Honour (Prime Minister Award) ISCA, DST, Govt. of India (2019)
- Best Research award, NCERT, Govt of India (2018)
- Early carrier Research Award, DST-SERB, Govt. of India (2018)
- Congress Bursary award/APS Recognition award ICPP, Boston, Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln, USA (2018)
- International award for young agricultural researchers, JIRCAS, Ministry of Agriculture, Government of Japan (2017)
- Prof. H.C. Dube Outstanding Young Scientist Award by Indian Society of Mycology and Plant Pathology, India (2018)

Publications: 105; **Books:** 17; **Book Chapter:** 19; **Technical Books/notes:** 15
Popular articles: 08, **Patent:** 04 (National); **Research Citation:** >3000; **h-Index:** 34 **i10 index:** 69
E-mail: coordinator@ioe.uni-mysore.ac.in

2. **Dr. K.T. Chandrashekara** Ph.D.
Designation: Principal Scientist
Specialization: Gerontology
Awards and Honours:
- JNU Postdoctoral Fellow (2009)
- DU Postdoctoral fellow (2010)
- Rajiv Gandhi National Gold Medal (2016)

Publications: 32, **Book:** 1, **Dissertation guided:** 38
E-mail: ktchandru@ioe.uni-mysore.ac.in

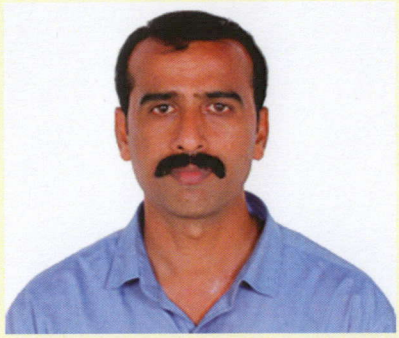
3. **Dr. Shailasree Sekhar** Ph.D.
Designation: Scientist
Specialization: Biochemistry
Awards and Honours:
- Young Scientist, SERB-DST, Govt of India (2004),
- Biodiversity and Sustainable Development, best poster award (2018)
- Best poster award, ISMPP (2011)
- Best paper award, DANIDA ENRECA
- Prof. Krishna Sahai Bilgrami Best paper award (2006)
- Prof. M.J. Narasimhan Merit Academic award (2005)
- Best poster award, ISMPP (2004)
- Association of Microbiologists best paper award (1998)
- Society of Biological Chemist best paper award (1996)

Publications: 42, **Book:** 1, **Book Chapter:** 1, **Patents:** 02, **Dissertation guided:** 23
E-mail: shailasree@ioe.uni-mysore.ac.in

4. **Dr. M.S. Vijaya Kumar** Ph.D. (Japan)
Designation: Ramanujan Faculty Fellow
Specialization: Inorganic Chemistry, Materials Chemistry and Microgravity Sciences
Awards and Honours:
- Ramanujan Fellowship, SERB-DST, Govt of India (2016)
- Tufts-NASA Postdoctoral Fellowship, USA (2014)
- JSPS Post-Doctoral Fellowship, Japan (2012)
- JAXA Research Associate Fellowship, Japan (2009)
- MEXT Japan Government Scholarship, Japan (2005)
- AIEJ Scholarship, Japan (2004)

Publications: 47, **Dissertation guided:** 18
E-mail: vijayakumar@chemistry.uni-mysore.ac.in

Prof. G. Hemantha Kumar
Hon'ble Vice Chancellor
University of Mysore, Mysuru



Prof. S. Chandra Nayaka
Coordinator, Vijnana Bhavan
University of Mysore, Mysuru

TECHNICAL STAFF

Dr. H. N. Shankar
Technical Officer

Mr. R. Yogesha
Technical Assistant

Mr. Amardeep
Technical Assistant

Mr. P. Shanmuka Priya
Technical Officer

Mrs. K. S. Meenakshi
Computer Hardware Technician

Mrs. Chethana
Lab Assistant

Mr. S. Kiran Kumar
Technical Officer

Mr. H. K. Adarsh Kumar
Technical Assistant

Mrs. Nayana
Lab Assistant

Contact
The Coordinator
Vijnana Bhavan
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