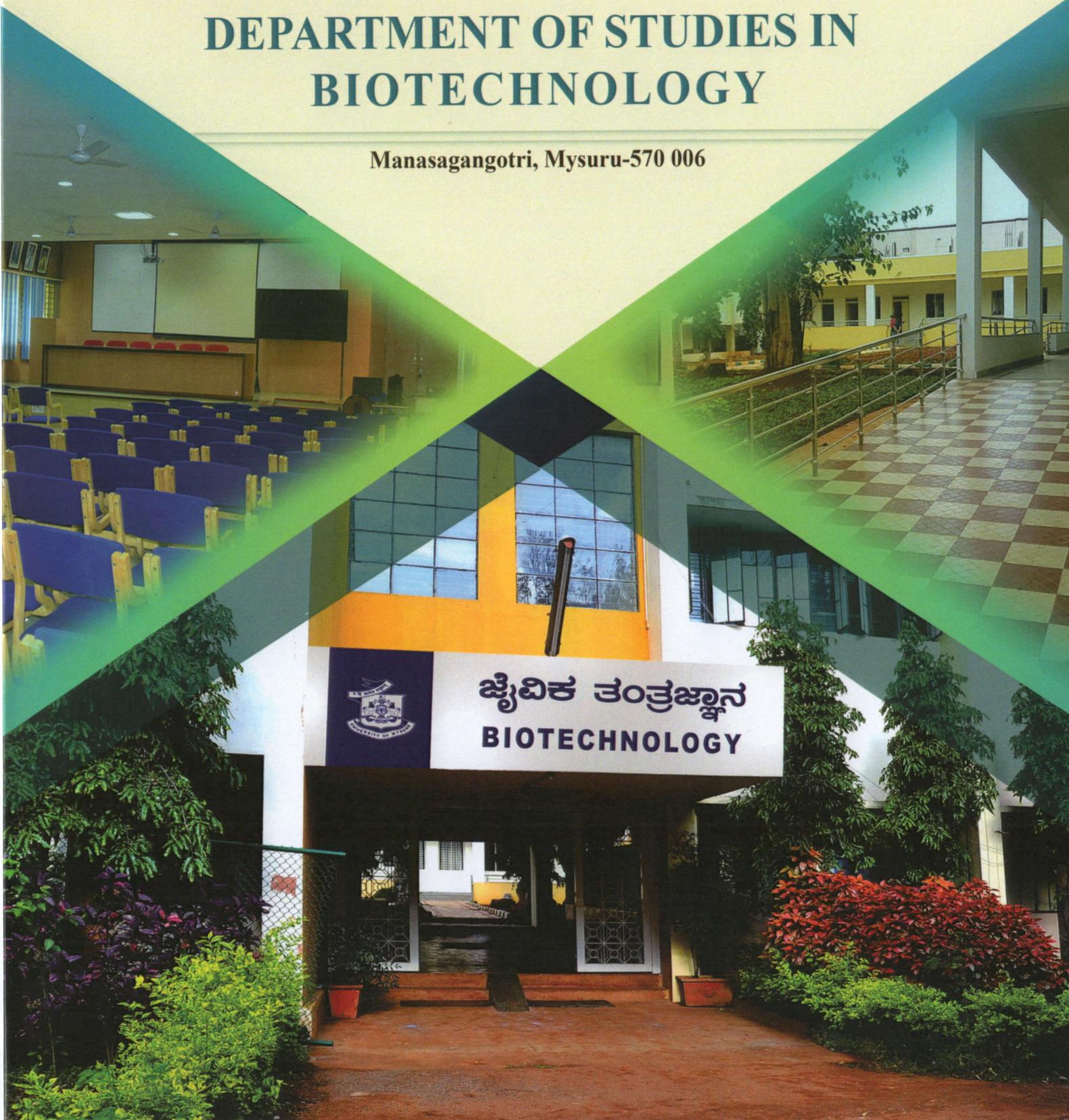




ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ  
UNIVERSITY OF MYSORE

# DEPARTMENT OF STUDIES IN BIOTECHNOLOGY

Manasagangotri, Mysuru-570 006



ಜೈವಿಕ ತಂತ್ರಜ್ಞಾನ  
BIOTECHNOLOGY

# Genesis

The University of Mysore established Department of Studies in Applied Botany and Seed Pathology (DAB) by integrating the ICAR supported Downy Mildew Research Laboratory (DMRL), UGC-SAP-DRS programme on Seed Pathology and M.Phil. in Seed Pathology programme which were formerly housed in the Department of Studies in Botany. DAB introduced M.Sc. in Biotechnology in 1992, which was recognized under DBT-HRD programme of Government of India in 1998. The Department proved its potential as a premier training and research center by attracting grants from various national funding agencies like UGC, ICAR, ICMR, DAE, DBT, and DST, and international agencies like DANIDA, EEC, EU etc. In the last 20 years, the department has generated INR 25 Crores.

M.Phil. programme in Seed Pathology (later Seed Technology) was initiated by the efforts of Dr. Paul Neergaard and Dr. S. B. Mathur, Director of DGISP in the year 1980. Dr. Paul Neergaard was a Visiting Professor under Sir M. Visweswaraiiah Chair. With the support of DANIDA and Danish Seed Health Center (DSHC) the department was recognized as Asian Seed Health Center to coordinate the training and research activities in seed health for the Asian region.

The DOS in Applied Botany & Seed Pathology was renamed as DOS in Biotechnology in 2009 by integrating all the courses and research activities and the faculty resources. The M.Sc. Biotechnology Programme at the department is funded by DBT under the HRD scheme. Under this scheme 15 students are admitted to the M.Sc. programme through National level Graduate Aptitude Test in Biotechnology (GAT-B) conducted by National Testing Agency. The department is currently carrying out research in various branches of Biotechnology such as Plant molecular biology and biotechnology, Molecular plant microbe interactions, microbial biotechnology, cancer biology, peptidoglycomics, environmental biotechnology, nanotechnology, etc.

## ACADEMIC PROGRAMMES

### 1. M.Sc. Biotechnology Programme (DBT-Funded)

**Eligibility :** Candidates with Bachelor's Degree in Science including Agricultural, Pharmacy, Chemical Engineering, Medicine, Veterinary, Dairy, Fisheries, Horticulture, Forestry from any University recognized by UGC / ICAR / AICTE / Medical Council with an aggregate minimum of 55 % (50 % in case of SC/ST) or equivalent grade

**Duration :** Two years (4 Semesters, CBCS)

### 2. Ph.D. (As per UGC/University Regulations)

**Research Areas :** Biotechnology, Applied Botany

**Admissions :** National Fellowships (UGC/CSIR/ DBT/ ICMR/ DST-Inspire) or through University entrance examination.

The course is for minimum 2 years and maximum 5 years.

### Thrust Areas of Research

**Plant Molecular Biology :** Molecular Plant - Microbe Interactions, Molecular diagnostics for plant and food-borne pathogens, **Biopesticides :** Identification and characterization of biocontrol agents, mass culturing formulations, field applications, **Mycotoxins :** Molecular characterization of toxigenic fungi, analysis, biocontrol, **Molecular Diversity and development of molecular markers for medicinal plants, Bioprospecting of Medicinal Plants / endophytes, Molecular oncology :** Drug discovery and validation for anticancer and anti-arthritis therapy, **Peptidoglycomics :** Glycoconjugates from colostrum in health and disease, **Bioremediation :** Heavy metal biosorption by microbes, rhizoremediation, mycoremediation, **Nanobiotechnology:** Biogenic nanomaterials for smart agriculture and healthcare.

### Research Projects

UGC-SAP : (DRS : 1982 - 2007 ; DSA : 2007- 2012 ; 2014 - 2019). DST-FIST (Phase I : 2003-08;

Phase II: 2010- 2015). DBT-HRD programme for M.Sc. Biotechnology (1999- Till date). ICAR-AICRP (1975- Till date).

The faculty members are having research projects sponsored by UGC, DST, DBT, DAE, ICAR, ICMR etc.

## Research Output (2014-2021) :

No. of Ph.Ds. produced : 52, Total No. of Publications : 150 ( National Journals : 20, International Journals : 130).

## Infrastructure Facilities

Equipment:- High Speed Refrigerated Centrifuges, Thermal cyclers, Microscopes "Epifluorecence, phase contrast, stereo binocular with digital imaging, Inverted Trinocular and fluorescence with CCD Camera, Deep freezers (-20°C and -80°C), UV-Visible Spectrophotometer, Gel documentation unit/Chemidoc-it, Biofermentor, CO<sub>2</sub> incubator, Nano drop Spectrophotometer, Multimode Plate Reader, Liquid Scintillation Counter, Lyophilizer.

Other Facilities : - Computational and networking facilities, Departmental Library, Generator facilities, Green House, Screen House and Polyhouse facilities, Plant Tissue Culture, Eukaryotic Cell Culture facility, Well equipped Molecular Biology Laboratories, National facility to screen for downy mildew resistance in Pearl Millet, Two Lecture Halls, One Seminar Hall, Four practical Labs for M.Sc. Students.

## International and National linkages

University of Copenhagen, Denmark, Sokoine University of Agriculture, Tanzania, Asia Pacific Seed Association, Thailand, Bangladesh Agricultural University, Bangladesh, Nepal Agricultural Research Council, Nepal, China Agricultural University, China, Can Tho University, Vietnam, Hokkaido University, Sapparo, Japan, International Crops Research Institute for the Semi-Arid-Tropics, India, Medical University of South Carolina, USA, University of Freiburg, Germany, Central Food Technological Research Institute (CFTRI), Mysore, Indian Institute of Science (IISc), Bangalore, Indian Council of Agricultural Research (ICAR), New Delhi, National Centre for Biological Sciences, Bangalore, Advanta India Pvt. Ltd., Bangalore, East-West International Seeds Pvt. Ltd. Aurangabad.,

## Student's progression (2014-20)

25 students have cleared various competitive examinations such as UGC-CSIR-NET/ KSET/ DBT-JRF/ ICMR-JRF/ GATE. Over 35 M.Sc. Biotechnology students have been selected for Ph.D. pogrammes at various institutes and Universities in India/abroad. Over 10 Ph.D. students have been selected for Post Doctoral programmes. Over 40 students have been placed at various industries / academic institutions.

## M.Sc. Syllabus

### Hardcore Courses

Bioanalytical Techniques , Microbiology ,Biochemistry Practical-1 (Bioanalytical Techniques, Microbiology, Biochemistry), Molecular Biology , Genetic Engineering, Immunotechnology, Practical-2 (Molecular Biology, Genetic Engineering, Immunotechnology), Plant Biotechnology, Animal Biotechnology , Bioprocess Technology, Practical-3 (Plant and Animal Biotechnology, Bioprocess Technology) Project work.

### Softcore Courses

Food & Environmental Biotechnology, Biostatistics & Bioinformatics, Molecular Genetics, Genomics & Proteomics, Cell Biology and Cellular Signalling, Molecular Diagnostics, Natural Products & Drug Discovery, Nanobiotechnology, Stem Cell & Regenerative Medicine, Molecular Plant Pathology

### Open Elective Course

Biotechnology and its applications (For other discipline students)



# FACULTY PROFILE



**Dr. H. S. Aparna** : Professor

Specialization : Glycoproteomics, Peptidomics, Drug discovery, Molecular dynamics

Awards & Distinctions :

Overseas Associateship-INSA-JSPS-2012, Best Research Publication Award-VGST-2011, Overseas Associateship -GLYCOTRIC-2009



**Dr. S. Umesha** : Professor

Specialization : Molecular Diagnostics of Plant/-Animal/ Food-borne Pathogens, Plant Biotechnology, Molecular Plant Pathology, Host-Pathogen Interactions, Nano Science and Nano Technology, Cell and Tissue culture technology.

Awards & Distinctions : UI Baby Endowment Lecture Award-2021, V.P. Bhide Memorial Lecture Award- ISMPP- 2019, Fellow of Indian Society of Mycology and Plant Pathology (FISMPP)- 2016, Overseas Associateship- DBT- -2007, Prof. K. S. Jagadeeshchandra Young Scientists, Award for Plant Sciences, 2001-2002



**Dr. K. Ramachandra Kini** : Professor

Specialization : Plant Molecular Biology, Molecular, Plant-Pathogen interactions, Genetic profiling of plants and microbes

Awards & Distinctions : Prof. H.C Dube Memorial Outstanding Young Scientist Award -ISMPP-2012, BOYSCAST Fellowship-DST- 2007, Young Scientist Award- ISCA-1999



**Dr. Geetha N** : Associate Professor

Specialization : Nanobiotechnology, Plant-Microbe, Interactions, Bioremediation, Bioprospecting of Plants and microbes, Cell and tissue culture technology.

Awards & Distinctions : PP Singhal memorial Pesticides India Award- ISMPP- 2004, Smt. Guman Devi Verma Best Woman Scientist Award-ISMPP- 2002, Young Scientist Award- ISCA-2002



**Dr. Lokesh S** : Associate Professor

Specialization : Seed/Plant Pathology/ Phytotechnology



**Dr. H.S. Prakash** : BSR Faculty Fellow (Superannuated February 2018)

Specialization : Plant and microbial biotechnology: Molecular plant pathology, Seed virology, molecular diagnostics, RNA interference, molecular markers, bioprospecting of medicinal plants & endophytes

Awards & Distinctions : Prof. V Puri Award- IBS-2011, Fellow of National Academy of Agricultural Sciences (FNAAS)-2010



**Dr. Bharathi P. Salimath** : BSR Faculty Fellow (Superannuated March 2020)

Specialization : Molecular oncology, antiangiogenic therapy of cancer, medicinal plants for anti-cancer activity

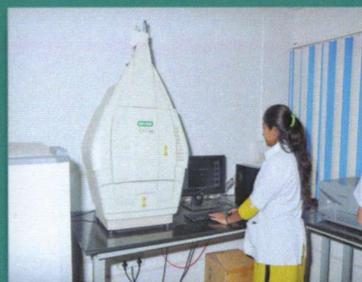
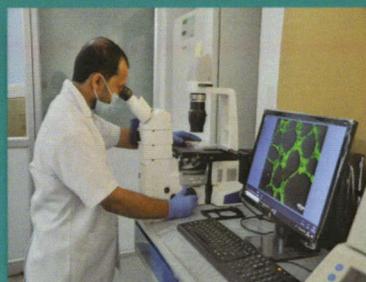
Awards & Distinctions : Khorana Tech Transfer Fellow - IUSSTF-2012 , Overseas Associateship-DBT- 2008, Kalpana Chawla Award-KSCST 2004, Kristen-Weg Fellowship- 1998



**Dr. S.R. Niranjana** : Former Vice-Chancellor and Distinguished , Professor (Life-long) , UOM (Superannuated July 2021)

Specialization : Agricultural Biotechnology, Biological control, Molecular Plant ,Pathology, Microbial Technology, Seed Science and Technology

Awards & Distinctions : Honorary Fellowship of Karnataka Science and Technology Academy, 2020., Dr. K. C. Mehta Memorial Award 2019-2020 by the National Academy of Agricultural Sciences (NAAS), New Delhi., Fellow of The National Academy of Sciences, India (NASI)- 2018. , Dr. Raja Ramanna State Award for Scientists - 2016, KSCST, Former Vice Chancellor, Gulbarga University Kalaburgi (2015-2019) , Fellow of National Academy of Agricultural Sciences (FNAAS)-2011, CV Raman Young Scientist Award -2009, KSCST , President-ISMPP-2010 , V.P. Bhide Memorial Lecture Award- ISMPP- 2004 .



Contact : The Chairperson, Department of Studies in Biotechnology

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