

Resource Persons

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Registration

Register through Google Form Link

<https://forms.gle/XwGE91UbJbK22Yz27>

Scan code to register



Registration Fees

For Research scholars : Rs.600/-

For the students : Rs.500/-

(preferably UG & PG Final years) Limited to 30 participants only

No TA/DA will be provided. (Registration fee includes Refreshment, lunch and Kit) Accommodation will be arranged on payment basis with prior intimation

Registration can be done by paying the registration fees through G Pay - Dr. L. Joelri Michael Raj - 96003 41157

CHIEF PATRON

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Asst. Prof. and HOD (i/c), Dept. of Botany

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Asst. Prof. and HOD, Dept. of Zoology

ORGANISING SECRETARIES

Dr. M. Johnson Gritto
Asst. Prof., Dept. of Botany

Dr. S.Mabel Parimala
Asst. Prof., Dept. of Zoology

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ST. XAVIER'S COLLEGE (Autonomous)

(Recognized as 'College with Potential for Excellence' by UGC)
(Accredited at 'A++' Grade with a CGPA of 3.66/4 in the IV cycle by NAAC)

PALAYAMKOTTAI - 627 002.

**National Workshop on
Cell imaging and
Cytological techniques
using Bright field, Fluorescence
and Phase Contrast
Microscopy**

Sponsored by

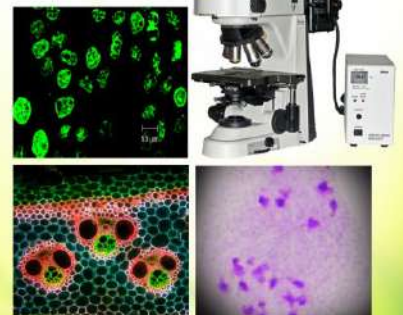
INCISE INFO TECH PVT LTD

(Distributor for NIKON microscopes)

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**Department of Botany &
Department of Zoology**

St.Xavier's College (Autonomous)
Palayamkottai - 627 002.

Profile of the College

St. Xavier's College was established at Palayamkottai in 1923 by Jesuit Fathers of the Jesuit Madurai Province with an aim of preparing generations of students for a happy, healthy and harmonious life. The motto of the college is "*Veritate Lumen et Vita*" ("Light and Life through Truth"). It is a grant-in-aid institution recognized by the UGC Act under sections 2(f) and 12(B).

The college is affiliated to the Manonmaniam Sundaranar University. In recognition of its service and excellence, the college was granted autonomy in 1987. The UGC awarded the status "College with Potential for Excellence" in 2004 and again in 2010, 2014 and 2019. The NAAC accredited at A++ grade with a CGPA of 3.66/4 in IV cycle in 2019.

STAR College scheme has been awarded by DBT, Govt. of India. In the ranking conducted by NIRF, the college ranks 68 in College Category in 2022. Today more than 4500 men and women students study in 17 post-graduate and under-graduate departments. Doctoral research is carried out by 12 departments. With great pride and joy the college had celebrated its hundred years of existence.

About the Botany Department

The Botany Department with a Post graduate and Research Centre had its beginning in 1927 with an intermediate Botany programme. Botany has been offered as an Ancillary subject since 1957. Later, in 1970 the Department had its own beginning offering B.Sc. Botany and in 1983 the M.Sc. programme was started. By the concerted efforts of the faculties from the period of its establishment, especially the extensive scientific works of Rev. Dr. V.S. Manickam SJ, the Department has grown to the present status and it was upgraded as a Research Department in 1994. CBB (Centre for Biodiversity and Biotechnology) and a Herbarium of fern collections was established with international recognition by IAPT. Since then several major

and minor research projects supported by agencies such as UGC, DBT, DST-SERB, CSIR, TNSCST, ICSSR and UBCHEA have been completed. More than 100 scholars have completed their Ph.D., from the Research centre of the Department. The Department of Science & Technology of the Govt. of India has chosen this Department as one of the centers for "Fund of improvement of Science and Technology Infrastructure in University and Higher Education Institutes" (FIST). It has become a fully fledged research centre to offer research programs in vast areas of Plant Sciences. Moreover the department has its own instrumentation centre with sophisticated instruments for Molecular Biology, Microbiology, Phytochemistry and Plant Tissue Culture.

About the Zoology Department

The Department of Zoology was started in 1927 when the subject was taught to intermediate students. B.Sc. program was incepted in 1957 and upgraded to M.Sc. in 1979. The department was recognized a research department in 1985 with Ph.D. program and M. Phil. program offered since 1986. In the years 2003 and 2018, the department was recognized as DST-FIST sponsored department. In 2014, the department was included under STAR-College Department Scheme offered by the Department of Biotechnology, Ministry of Science and Technology, Govt. of India. The department in 2018 celebrated its Diamond Jubilee commemorating its 60 successful years. At present, the faculty members have individual laboratories and guide research scholars for their doctoral degree and work in areas of basic and applied aspects of applied zoology, aquaculture, agriculture zoology, medical entomology, insect immunology, wildlife biology, phytochemistry and pharmacology.

About the Workshop

Most of the graduates and scholars may be aware of using bright field microscopy for Plant, Microbial &

Animal Cell imaging and Cytological techniques to some extent. However students need special skills to apply the same for research purposes. Moreover use of fluorescence and Phase Contrast Microscopes need more training and attention. Applications of these microscopy techniques are huge and need to be explored time to time. In this workshop we will help you to understand the use of three different microscopy techniques. We will primarily help you to explore cell imaging and cytological techniques using Bright field Microscopy.

We will also extend a basic training in using Fluorescence / Phase contrast microscope (Nikon 80i). The reason to go for Phase contrast imaging is to enhance the contrast of images of transparent and colourless specimens. It enables visualization of cells and cell components that would be difficult to see using an ordinary light microscope. As phase contrast microscopy does not require cells to be killed, fixed or stained, the technique enables living cells, usually in culture, to be visualized in their natural state. This means biological processes can be seen and recorded at high contrast and specimen detail can be observed. Fluorescence staining can be used in combination with phase contrast to further improve the visualization of samples. Most cellular components are colorless and cannot be clearly distinguished under a microscope. The basic premise of fluorescence microscopy is to stain the components with dyes (fluorophores or fluorochromes).

Interesting fields of study that will be explored using these microscopy techniques

1. Mitosis and Meiosis
2. Karyotyping / Ploidy determination (Cytotaxonomy)
3. Double staining and Permanent slide preparation
4. Basic Fluorescence and Phase contrast imaging techniques.
5. Plant Histochemistry (Under Fluorescence microscope using TRITC and FITC filters)
6. Microbial and Animal Cell imaging and Viability testing (FITC staining)