IIITDM Kancheepuram

Inviting Applications for Internships under AV VRITIKA Scheme- 2022

Thrust areas: Optics, Instrumentation, Spectroscopy, Product Design, Biomedical Engineering

ABOUT IIITDM KANCHEEPURAM

IIITDM Kancheepuram is an Institute of National Importance established by the Ministry of Education, Government of India to pursue design and manufacturing-oriented engineering education and research and to promote the competitive advantage of Indian products in global markets. The Institute offers B Tech, M Tech, M Des programmes, and PhD programmes in Computer Science and Engineering, Electronics and Communication Engineering, Mechanical Engineering, Interdisciplinary Product Design, Mathematics, Physics and English. Recently the Institute is offering PhD in Biomedical Engineering.

ABOUT VRITIKA RESEARCH INTERNSHIP SCHEME

VRITIKA' is the call for initiation and practice in science through Training and Skill Internship. This program aims to provide opportunities to promising PG students from universities and colleges to get exposure and hands-on research skill development experience. These internships will primarily be facilitated by organizations / institutions / laboratories of national importance.. For further details visit the following links:
https://acceleratevigyan.gov.in/programs/abhyas/vritika & http://serb.gov.in/abhyaas.php

INTERNSHIP DETAILS

Duration: 10th November, 2022 to 8th January, 2023
Place of Internship: IIITDM Kancheepuram
Required number of interns: 2
Reporting date of selected candidates: 10th November, 2022

- No Stipend will be provided for the Internship. Boarding and Lodging Expenditures, and other expenditures incurred as part of internship for consumables, travel, etc. shall be supported as per the Scheme Approval of SERB AV VRITIKA.
- Certificate will be provided to the interns after the successful completion of the internship tenure.

ABOUT THE INTERNSHIP

Title: A mobile camera-based Raman Spectroscopy device to study the molecular signature of breast cancer tissues.

Abstract: Raman spectroscopy has become a powerful technique to quantify the chemical composition of the analyte by the study and analysis of molecular signatures of the analyte. Understanding these chemical compositions can lead to various applications such as diagnosing diseases such as cancer, identifying harmful gases such as carbon monoxide, and validating the originality of precious metal. This project deals with designing and developing a miniaturized Raman Spectroscopy device that can be paired with the mobile camera to rapidly analyze molecular signatures using a mobile app. A machine learning approach needs to be developed to train the mobile app to examine the molecular signatures and identify the chemical composition of the cancerous and adjacent normal ex-vivo breast tissues. The project is interdisciplinary in nature, dealing with optics, electronics, machine learning, and design.

APPLICATION DETAILS

Who can Apply? PG level (M.Tech./M.E./M.Sc.) students (DD also), Ph.D scholar pursuing their degree from University / Institution within India.
How to Apply? Please fill this Google Form
Deadline for Application: 1st November, 2022 (Shortlisted candidates shall be intimated on or before 5th November, 2022)
Selection procedure: Candidates having prior experience with optics, instrumentation, electronics will be prefered.

ABOUT LEAP LAB @ IIITDM KANCHEEPURAM

The research focus of LEAP Lab (Light Engineering and Applied Photonics) is interdisciplinary in nature. It addresses the challenges in developing clinical diagnostic devices, including microscopic and macroscopic investigations of cells and tissues. It is a convergence of advancements in the field of optical, thermal, and acoustic modalities with clinical diagnosis.

ADDRESS FOR CORRESPONDENCE

Principal Invesigator: Dr. Uttam M. Pal
Assistant Professor, Biomedical Engineering Stream
Department of Sciences and Humanities, IIITDM Kancheepuram-Chennai, Vandalur-Kelambakkam Road
Chennai- 600127
Email: uttampal@iiitdm.ac.in **Telephone:** 044 2747 6136
Website: www.leaplab-iiitdm.co.in