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Azadi Ka
Amrit Mahotsav



विज्ञान एवं प्रौद्योगिकी विभाग
DEPARTMENT OF
SCIENCE & TECHNOLOGY

NATIONAL INSTITUTE OF TECHNOLOGY WARANGAL

Warangal - 506 004, Telangana

Synergistic Training Program Utilizing the Scientific and
Technological Infrastructure (STUTI)

Call for Registration and Participation Training Program on R&D Equipment

Theme: Physico-chemical Characterization of Functional Materials

Program Dates: 17th – 23rd August, 2023

Venue: **Central University of Kerala, Kasaragod, Kerala**



Register before: **10-08-2023**



Scan to Register

No Registration Fee

Click to register: <https://forms.gle/HMtP6wz3G5nKxf8n6>

Objectives of the Program:

- To enable the participants to understand the principles, applications, and hands-on experience on sophisticated analytical instruments.
- To gain knowledge about the in-depth analysis of the characterization techniques using high-end analytical instruments.
- To interact with eminent professors/scientists/ industrial research personnel and discuss real-time research and make collaborations.
- To encourage the participants to utilize the facilities and enhance the research temper.
- To create a research-friendly atmosphere by letting the creative minds of the country exchange ideas and share their knowledge among their fellow participants.

Eligibility Criteria:

- Persons of Indian origin.
- Faculty / Scientists / Post-Doc Fellows / Ph.D. Fellows / Industry Persons / M.Sc. students/ MTech. students who are actively involved in research and development (R&D) in the fields of Chemistry, Instrumentation, or any relevant area.

Important Instruction:

Fill in the prescribed bio-data form attached with this brochure and get it endorsed by the head of the institution. And keep the scanned copy ready, which needs to be uploaded during registration.

Organized by
Central University of Kerala, Kasaragod, Kerala (Spoke)

&
NIT Warangal (Hub)

Funded by

DST, Govt of India

About Central University of Kerala:

Central University of Kerala, established by the Central Universities Act in the year 2009, is situated in the north Malabar region of Kerala in Kasaragod district in 310 acre sprawling campus. Nestled between the Arabic sea on the West and the forest highlands of the Western ghats on the East, the university was founded on the noble vision of “caring wisdom” to serve the cause of higher education in the region. Kasaragod is a place of cultural and linguistic confluence blessed with nature’s beauty, remarkable for traditional cultural performances like the theyyam and renowned for historical landmarks like the Bekal Fort. The University launched its academic activities in the same year with 17 students in two PG departments in a rented building. Today, the university has grown into a full-fledged institution and offers 53 academic programs in 27 departments through 12 Schools of studies. Around 190 faculty members, 250 non-teaching staff and 2500 students from different states of our country and a few from around the globe call this campus home. Though founded only 13 years ago, CUK ranked 2nd among the newly established Central Universities and has been ranked 11th in a recent Outlook-ICARE Ranking among all Central Universities in India. In addition to headquarters located at Periya the University has Law department located at Thiruvalla in Pathanamthitta. The University is accredited by NAAC with “A” Grade in the 2nd cycle, 2022.

The Department of Chemistry (DoC) established in 2013. Over the years the department made a niche in chemistry education at the all India level as certified by various bodies over a period of time. With a complement of highly qualified teachers, skilled technical staff, state-of-the-art laboratories and learning resources, the department is globally recognized as a premier department chemical science. The Department offers MSc and PhD programs in chemical science. Many faculty members have made significant contributions both at the National and International levels. The faculty are active in research, have published a good number of research papers with high impact factor, and undertook several research projects funded by UGC, SERB, KSCSTE, CSIR etc. The Institute has successfully public and private sector.

About NIT Warangal:

National Institute of Technology Warangal, formerly known as Regional Engineering College, was established in 1959. Over the years it has developed into a premier institute of higher learning and is ranked among the top technical education institutions in India. There are 14 Departments offering eight undergraduate, 35 post-graduate programs and guiding 952 PhD scholars besides post-doctoral programs. About 6864 students across the country including international students’ study on the campus. It is a fully residential campus spread across 250 acres with excellent infrastructure in the form of state-of-the-art library, seminar halls, guest houses and research laboratories.

About STUTI:

The Scheme ‘Synergistic Training program Utilizing the Scientific and Technological Infrastructure’ (STUTI) is intended to build human resource and its knowledge capacity through open access S&T Infrastructure across the country. As a complement to the various schemes of DST funding for expansion of R&D Infrastructure at academic institutions, STUTI scheme envisions a hands-on training program and sensitization of the state-of-the-art equipment as well as towards sharing while ensuring transparent access of S&T facilities.

STUTI Team:

Patron:

Prof. H. Venkateshwarlu

Vice-Chancellor, Central University of Kerala (CUK)

Chairman

Prof. Bidyadhar Subudhi

Director, NIT Warangal

Co-Chairman

Prof. Somasekhar V.T.,

Dean (R&C), NIT Warangal

Convenor

Prof. C.S.R.K. Prasad, Registrar(I/c), NIT Warangal

Principal Investigator

Prof. N. Narasaiah, Dept. of Metallurgical and Material Engineering, NITW & PI, STUTI

Co-Convenors

Prof. Vincent Mathew; Dean, SPS, CUK

Prof. K. Muruga Poopathi Raja Head, Dept. of Chemistry, CUK

Prof. Jonah Thomas Head, Department of Physics, CUK

Prof. Venkata Srilakshmi P, Head of the Centre CRIF, NITW

Co-Principal Investigator

Dr. T K Sai, Principal Scientific Officer, CRIF, NITW & Co-PI, STUTI

Program Coordinator

Dr. Ravi Kumar Kanaparthi

Assistant Professor, Department of Chemistry, CU Kerala

Sri Harish Madupu

Technical Officer, CRIF, NIT Warangal

Note:

The shortlisted candidates will be intimated through mail. All the selected participants have to submit the uploaded bio-data form physically for the confirmation of participation.

Non-local participants are eligible for boarding/ lodging at **Central University of Kerala** on double sharing basis.

For domestic travel of participants, the reimbursement for train/bus tickets is allowed as per actual up to 3AC fare (for outstation participants only).

Contact Us:

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CU Kerala

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Sri Harish Madupu,
Technical Officer, CRIF,
NIT Warangal

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Instruments covered for training:

- UV-Vis-NIR spectrophotometer
- FR-IR Spectrometer
- Fluorescence Spectrometer
- X-ray Diffractometer
- Atomic Force Microscope
- Electrochemical Workstation
- Time-resolved Single Photon Counting Spectrometer
- Density Functional Theory Calculations
- Polarimeter
- Atomic Absorption Spectrometer
- Thermogravimetric Analysis

UV-Vis-NIR Spectrophotometer

Make: Agilent

Model: Cary 5000

Applications: UV-Vis Spectrometer is a versatile analytical instrument that is used to measure the absorbance of light in the ultraviolet, visible, and near-infrared regions of the electromagnetic spectrum. It is commonly used in various fields such as chemistry, physics, biology, medicine, environmental science, and materials science.



FT-IR Spectrometer

Make: Perkin Elmer

Model: Spectrum 2

Applications: FTIR is a technique used for the analysis of chemical compounds. It is used to identify and quantify the functional groups present in a sample, as well as to determine its molecular structure and composition. FTIR has wide range of applications in pharmaceuticals,



Fluorescence Spectrometer

Make: Agilent

Model: Cary Eclipse

Applications: Spectrofluorometer is used for studying fluorescent samples. It is used to study the fluorescence emission properties of molecules. This technique has wide range of applications in environmental, industrial, medical diagnostics, DNA sequencing, forensics, genetic analysis, and biotechnology. It is a valuable analytical tool for both quantitative and qualitative analyses.

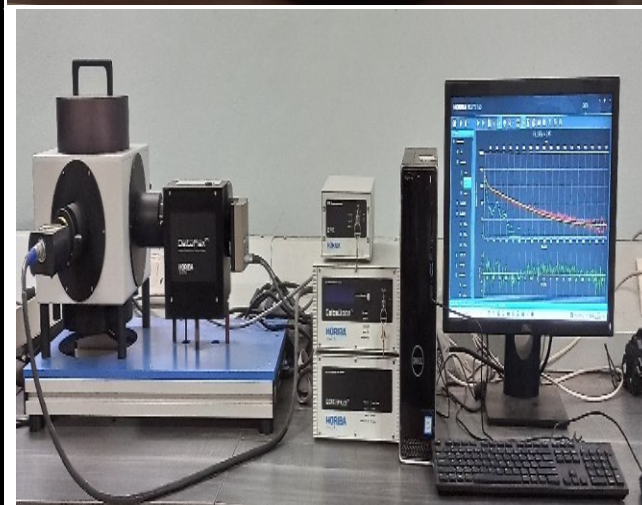


Time Resolved Single Photon Counting (TCSPC) Spectrometer

Make: Horiba Jobin Yvon

Model: Delta Flex

Applications: TCSPC is used to study the excited state lifetime of fluorescent molecules. By measuring fluorescent lifetimes, electron transfer and energy transfer reaction rates can be determined. TCSPC has wide range of applications in characterizing fluorescent molecules in field of OLEDs, energy harvesting and material science.



X-ray Diffractometer

Make: Rigaku

Model: MiniFlex 600

Applications: X-ray powder diffraction (XRD) is a rapid analytical technique primarily used for phase identification of a crystalline material and can provide information on unit cell dimensions. X-ray powder diffraction is most widely used for the identification of unknown crystalline materials such as minerals, inorganic and organic compounds. Determination of crystalline behavior of unknown solids is critical in geology, environmental science, material science, engineering and biology.



Atomic Force Microscope

Make: Nanosurf

Model: Flex AFM

Applications: AFM is widely used for the imaging and characterization of nanomaterials. It is used for studying the surface topography and the 3D-information of thinfilms, polymers nanoparticles, piezoelectric and ferroelectric materials is obtained. The AFM has wide range of applications in material science, geological and environmental sciences. It is also used for nanolithography

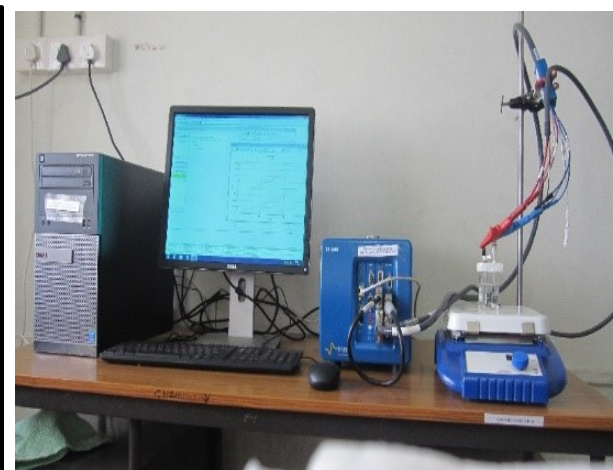


Electrochemical Workstation

Make: Biologics

Model: SP240

Applications: CV is a technique used to study the electrochemical behavior of materials by measuring current as a function of applied voltage. It is widely used in electrochemistry, materials science, and analytical chemistry for the characterization of redox reactions, determination of electrochemical kinetics, and investigation of electrochemical properties of materials.



Atomic Absorption Spectrometer

Make: Perkin Elmer

Model: SP240

Applications: ASS is used to quantify the metal present in any sample. It is extremely useful to estimate low concentrations of metals present in a sample which cannot be estimated using conventional titrimetric experiments. It has wide range of applications in environmental, agricultural, materials.



Density Functional Theory Calculations

Make: Gaussian

Model: Gaussian 16

Applications: Density functional theory (DFT) is a quantum-mechanical method often used to compute electronic structure of atoms, molecules and solids. It has been proved as a powerful technique in chemistry and physics for computing various properties of materials.

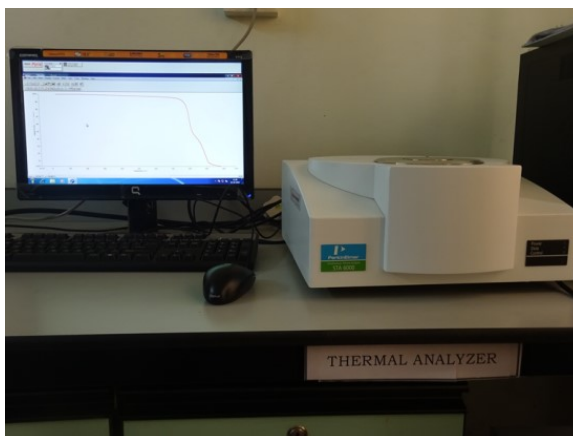


Thermal Analyzer

Make: Perkin Elmer

Model: STA 6000

Applications: Thermal analyzers are used for studying weight change and heat flow of the samples. Thermal properties of a wide range of materials such as organics, inorganics, polymers, and testing oils can be studied. Applications include compositional analysis, decomposition temperatures, engine oil volatility, flammability studies, lifetime predictions, measurement of volatiles, oxidative and thermal stabilities, catalyst and coking studies, melting and crystallization behavior, glass transition temperatures, specific heat capacity, kinetic studies and transition and reaction enthalpies.



BIODATA FOR STUTI-21 DST TRAINING PROGRAM

NAME Prof./Dr./Mr./Ms.																	

DESIGNATION																
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ORGANIZATION																

DATE OF ENTRY IN SERVICE															
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CATEGORY (GENERAL / SC / ST / OBC)									
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DATE OF BIRTH										
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SEX (M/ F)		
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COMPLETE ADDRESS (OFFICE)															

COMPLETE ADDRESS (RESIDENCE)															

CONTACT DETAILS	PHONE (O)	PHONE (R)	MOBILE No.	E-MAIL

EDUCATIONAL / PROFESSIONAL QUALIFICATIONS (GRADUATION ONWARDS)					
Sr. No.	EXAMINATION/ DEGREE	UNIVERSITY/ INSTITUTE	YEAR	SUBJECT	DIVISION/PERCENTAGE OF MARKS

EXPERIENCE					
Sr. No.	NAME OF THE ORGANISATION	DESIGNATION	FROM	TO	DUTY PERFORMED

TRAINING ATTENDED				
Sr. No.	YEAR	NAME OF THE TRAINING PROGRAMME	NAME OF THE INSTITUTE	DURATION

RESEARCH EXPERIENCE				
Sr. No.	YEAR	TOPIC OF RESEARCH	SPONSORING AGENCY	GIST OF REASEARCH

PAPER PUBLISHED / PATENT FILED/OBTAINED				
Sr. No.	YEAR	TOPIC OF PAPER/ BOOK	GIST OF PAPER	NAME OF JOURNAL/ MAGZINE/ PUBLISHER

Briefly give details of significant contribution made by you in the field of Science & Technology during your career. (100 words)

Date:
Place:

(Signature of the Participant)

(Head of the Institution)