

CENTRAL INSTRUMENTATION CENTER



**KONERU LAKSHMAIAH EDUCATION FOUNDATION
GREEN FIELDS, VADDESARAM,
AP, INDIA**

Contact Details Center In-charge

Dr. B T P Madhav

Professor - Addl. Dean (R & D)

Koneru Lakshmaiah Education Foundation, AP, India



About Central Instrumentation Center

Advanced and multipurpose equipment is needed to university faculty, scholars, students, and researchers to work in interdisciplinary and multidisciplinary fields. These equipment's and facilities help the faculty, research scholars and students to carry out globally competitive R & D in basic, applied sciences and in engineering. Since individual researchers may not be able to generate huge research funds for the research instruments, In 2016 Central Instrumentation Centre was started in KLEF with a mission to enrich the resources on a shared basis for promoting R & D with the following objectives

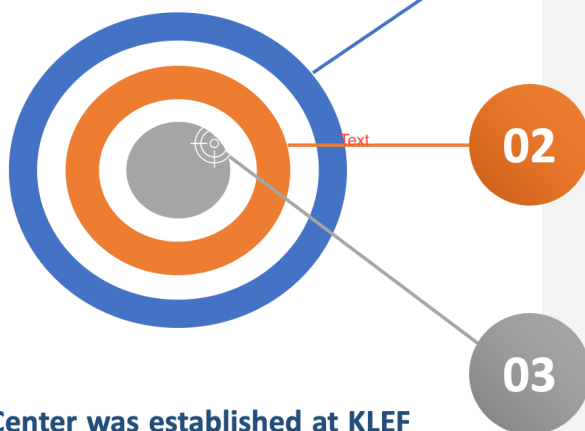
1. To strengthen technological infrastructure to carry out advanced research in various science, humanities, and engineering disciplines under one roof and make their services available to academic schools and departments.
2. To provide guidance for acquisition of data and train personnel in operation and maintenance of Sophisticated Instruments.
3. To organize short-term courses/workshops on the use and application of various spectroscopic and analytical techniques for students, faculty and technical personnel from our university, affiliated institutions, universities, and industry in the region.

The instruments are available to all the students, research scholars and faculty members of the university and affiliated institutions and other educational institutions, research labs and industry also on chargeable basis as per the policy. The users are to submit the requisition forms with the samples. Outstation users may contact the centre to reserve time slot for their use and visit with the samples on the date of appointment.

Consultancy projects will be taken based on the expertise available with faculty and the instruments available to carry out the research. The research consultancy will be paid with 70% to principal investigator and 30% to university. Testing consultancy will be paid with 30% to principal investigator and 70% to university.

Advanced and multipurpose equipment is needed to university faculty, scholars, students, and researchers to work in interdisciplinary and multidisciplinary fields.

The equipment and facility shall help the faculty, research scholars and students to carry out globally competitive R & D works in basic, applied sciences and in engineering.



Objective 01

To strengthen technological infrastructure to carry out advanced research in various disciplines

Objective 02

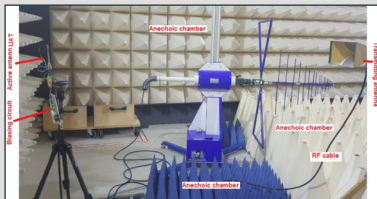
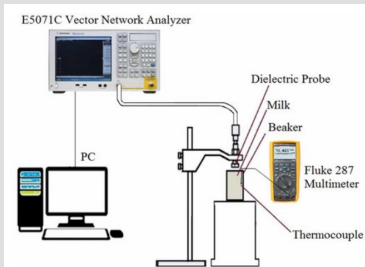
To provide guidance for acquisition of data and train personnel in operation and maintenance of Sophisticated Instruments.

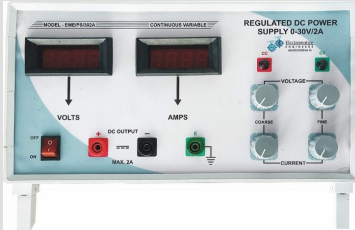
Objective 03

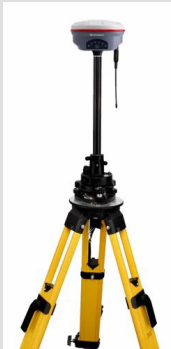
To promote Consultancy projects and service

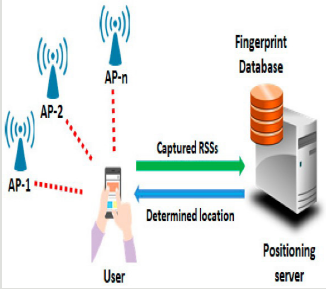
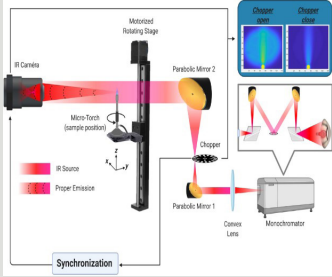
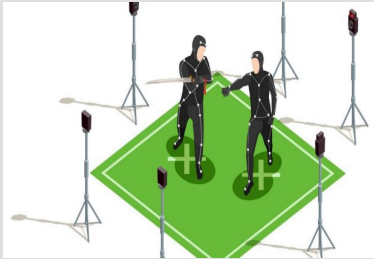
Central Instrumentation Center was established at KLEF with a mission to enrich the resources on a shared basis for promoting R & D

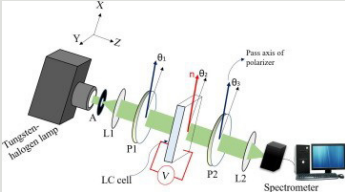
Equipment and Tools in CIC

Equipment's/ Tool Name	Facility Image	Description
Anechoic Chamber with Radiation Pattern, Gain, Axial Ratio Measurement Equipment		Purpose: To create a controlled environment free from reflections, enabling accurate measurement of antenna performance parameters. Application: Antenna testing and characterization for wireless communication systems, satellite communications, radar systems, and more.
Dielectric Probe Measurement Setup		Purpose: To measure the dielectric properties of materials, such as permittivity and loss tangent. Application: Material characterization, antenna design, and microwave circuit design.

Anritsu Combinational Analyzer MS2037C (VNA Master + Spectrum Analyzer) (5 kHz -15 GHz)		Purpose: To perform a wide range of RF and microwave measurements, including network analysis, spectrum analysis, and signal generation. Application: Component testing, system calibration, and signal integrity analysis.
PCB Prototype Machine		Purpose: To fabricate printed circuit boards (PCBs) for rapid prototyping and testing of electronic circuits. Application: Circuit design and development, prototyping, and small-scale production.
KEYSIGHT-EXG-X-Series Microwave Signal Generator (9 kHz - 13 GHz) Supplier- Synergy Measurements Technologies		Purpose: To generate stable and accurate RF signals for testing and calibration of RF and microwave systems. Application: Component testing, system calibration, and signal generation for communication systems.
Regulated Power Supply		Purpose: To provide stable and precise DC power to electronic devices and circuits. Application: Powering electronic devices, circuit testing, and calibration.
AARONIA-AG PowerLOG70180 High Power Horn Antenna (700 MHz - 18 GHz) Supplier- Synergy Measurements Technologies-2017		Purpose: To transmit and receive electromagnetic waves over a wide frequency range. Application: Antenna testing, wireless communication systems, and radar systems.

FLIR-E4 Thermal Camera Supplier-FLIR		Purpose: To visualize thermal radiation emitted by objects, allowing for temperature measurement and analysis. Application: Thermal imaging, fault detection, and energy efficiency analysis.
Lock-in Amplifier Supplier- LC- Vision-2012		Purpose: To extract weak signals from noisy environments by selectively amplifying signals at a specific frequency. Application: Precise measurement of small signals, spectroscopy, and biomedical instrumentation.
GPS receiver/ Novatel-6/2012		Purpose: To receive GPS signals and determine precise location and time information. Application: Navigation, surveying, and geospatial applications.
Navik Receiver		Purpose: To receive signals from India's regional navigation satellite system (IRNSS), providing accurate positioning and timing information. Application: Navigation, surveying, and timing applications within India.
SDR (Software Defined Radio)		Purpose: To provide flexible and programmable radio communication capabilities. Application: Wireless communication research, experimentation, and custom radio systems.

Bernese GNSS Software/5.2/2016		Purpose: To process GNSS data for precise positioning and timing solutions. Application: Geodetic surveying, precise timekeeping, and scientific research.
MET-4A sensor/Para Scientific/2015		Purpose: Measures meteorological parameters like temperature, humidity, and pressure. Application: Used in weather monitoring stations, environmental research, and agriculture
Pre and Post processing Server for Weather data		Purpose: Processes and stores weather data. Application: Used in weather forecasting, climate modelling, and agricultural applications.
Infrared Imaging system (Including two halogenic lamps and one Lens)		Purpose: Captures thermal images of objects. Application: Used in thermal imaging, non-destructive testing, and medical applications.
3D Motion Capture Image Systems		Purpose: Captures 3D motion of objects or people. Application: Used in animation, sports analysis, and human movement research.
Signal Analyzer- 7GHz		Purpose: Analyzes signals in the frequency domain Application: Used in electronic design, testing, and troubleshooting.

FPC 1500 Spectrum Analyser		Purpose: Analyzes signals in the frequency domain. Application: Used in electronic design, testing, and troubleshooting
DSC-Differential Scanning Calorimeter-Supplier-Perkin Elmer-2009		Purpose: Measures the heat flow associated with thermal transitions in materials. Application: Used in materials science, polymer science, and pharmaceutical research.
Polarizing Microscope Supplier- SSD Polymers-2009		Purpose: Examines samples under polarized light to study their optical properties. Application: Used in geology, mineralogy, and materials science.
Electronic Balance System Supplier- K-Roy-2010		Purpose: Measures mass with high precision. Application: Used in research, quality control, and analytical chemistry.
Liquid Crystal Analysis System Supplier- LC-Vision2012		Purpose: Analyzes the properties of liquid crystals. Application: Used in the development and testing of liquid crystal displays (LCDs) and other liquid crystal devices.
Nvis-71 PCB Prototype Machine (Automated) Supplier- Sciencetech Technologies-2017		Purpose: Creates prototypes of printed circuit boards (PCBs). Application: Used in electronics design and prototyping.

CMC DAQ, ECG & EMG Amplifiers Supplier- TMI Systems-2017		Purpose: Amplifies signals from various sensors, including those used in electrocardiography (ECG) and electromyography (EMG). Application: Used in biomedical research, clinical diagnosis, and sports science.
My Signals HW Complete Kit -Libelium Supplier- Libelium		Purpose: A hardware kit for collecting and analyzing data from various sensors. Application: Used in research, education, and hobby projects.
Electro-Chemical Workstation (Corrosion Tester) Supplier- Biologic Scientific Instruments, France		Purpose: Measures corrosion rates of materials in various environments. Application: Used in research and development, quality control, and failure analysis of materials exposed to corrosive conditions.
Wear Tester (Pin on Disc / Tribometer) Supplier- Ducom Instruments Pvt Ltd, Bangalore, India		Purpose: Measures the wear resistance of materials under controlled conditions. Application: Used in the development and testing of lubricants, coatings, and materials for mechanical components
Micro-Hardness Tester, Supplier- METCO Instruments Ltd, Chennai, India		Purpose: Measures the hardness of very small areas of materials. Application: Used in quality control, failure analysis, and research on the mechanical properties of materials

Master Abrasive Cutter with coolant supply Supplier- SASTHA Scientific Agencies, Bangalore, India		Purpose: Cuts hard materials with precision. Application: Used in the preparation of samples for microscopy and other analytical techniques.
Dual Polisher Cum Grinder Supplier- SASTHA Scientific Agencies, Bangalore, India		Purpose: Polishes and grinds samples for microscopy and other analytical techniques. Application: Used in the preparation of samples for metallographic analysis and other materials characterization techniques.
Metallurgical Microscope Supplier- SASTHA Scientific Agencies, Bangalore, India		Purpose: Examines the microstructure of materials. Application: Used in failure analysis, quality control, and research on the microstructure and properties of materials.
Weighing Balance Supplier- Ultra Instruments Ltd, Hyderabad, Telangana		Purpose: Measures the mass of objects with high precision. Application: Used in various applications, including research, quality control, and analytical chemistry.
Ansys Package with HFSS, Simplorer, Slwave, Savant		Purpose: A suite of software tools for simulating and analyzing electromagnetic fields Application: Used in the design and analysis of antennas, microwave circuits, and other RF and microwave components.

CST Microwave Studio		Purpose: Software for simulating and analyzing electromagnetic fields. Application: Used in the design and analysis of antennas, microwave circuits, and other RF and microwave components.
Antenna Magus		Purpose: Software for designing and analyzing antennas Application: Used in the design and analysis of antennas for various applications, including wireless communication, radar, and satellite systems.
ADS Tool		Purpose: Software for designing and simulating RF and microwave circuits. Application: Used in the design and simulation of RF and microwave circuits, including amplifiers, filters, and mixers.
AWR Tool		Purpose: Software for designing and simulating RF and microwave circuits Application: Used in the design and simulation of RF and microwave circuits, including amplifiers, filters, and mixers.

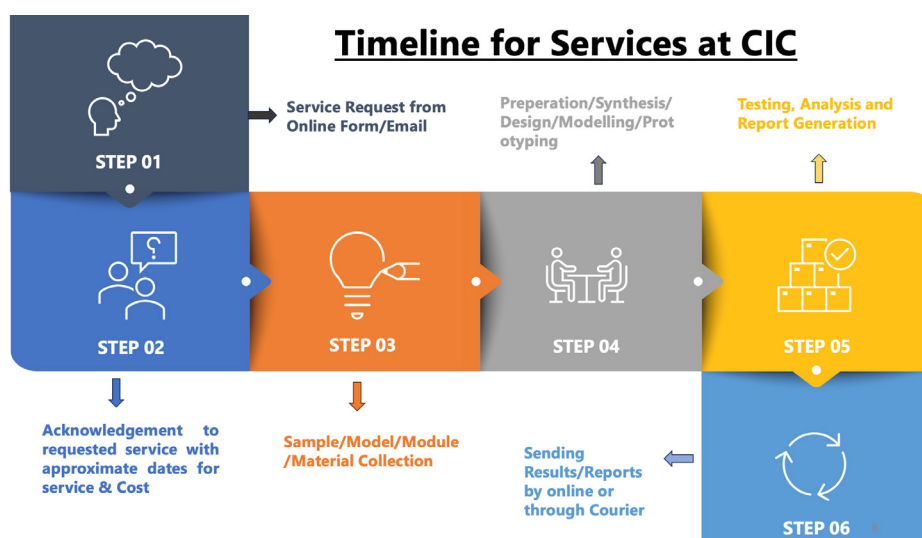


Services Offered by the CIC of KLEF



- Material Characterization on Dielectric Probe, DSC, XRD etc
- Design of scientific instruments with design tools
- Design and Simulation of Antennas, Filters and Microwave devices
- PCB design and component soldering for instrumentation
- Impedance, S-Parameters, VSWR measurements on VNA
- Electronic equipment testing under controlled humidity and temperature
- Support for Research and development activities for students and faculty

Timeline for Services at CIC



Consultancy Charges of Central Instrumentation Center

S. No	Instrument/Tool Name	No. of Samples/Units	Cost in Rs
1	Anechoic Chamber with Radiation Pattern Measurement Setup		
	a) Radiation Pattern(E & H-Plane)	@ Single Frequency	1000/-
	b) Gain Vs Frequency (2D)	Frequency range	1000/-
	c) Efficiency Vs Frequency	Frequency range	1000/-
	d) Axial Ratio Vs Frequency	Frequency range	1000/-
2	Combinational Analyzer (Spectrum + Vector Network Analyser)	S-Parameters	1000/-
3	Dielectric Probe (Dielectric Measurement for Solids and Liquids from 5 KHz to 15 GHz)	Per Sample	500/-
4	PCB Prototype Machine (Antennas, Filters and Microwave Devices)		
	a) Planar antenna/filter on FR4 substrate (Min size of 20x20 mm)	50 X 50 X 0.8 mm	800/-
		50 X 50 X 1.6 mm	1000/-
	b) Planar antenna/filter on RT-duroid Substrate (Min size of 20x20 mm)	30 X 30 X 0.8 mm	3000/-
		30 X 30 X 1.6 mm	3000/-
	c) Planar antenna/filter on other rigid substrates (Min size of 20x20 mm)	30 X 30 X 0.8 mm	1000/-
		30 X 30 X 1.6 mm	1000/-
	d) Conformal antenna/filter on polyimide substrate (Min size of 20x20 mm)	30 X 30 X 0.1 mm	1500/-
		30 X 30 X 0.2 mm	1500/-
	e) Conformal antenna/filter on liquid crystal polymer substrate (Min size of 20x20 mm)	20 X 20 X 0.1 mm	2000/-
		20 X 20 X 0.2 mm	2000/-
	f) Conformal antenna/filter on Fabric/Textile substrate (Min size of 20x20 mm)	20 X 20 X 0.1 mm	2000/-
5	FLIR-E4 Thermal Camera	Per Image	500/-
6	DSC-Differential Scanning Calorimeter	Per Sample	1000/-

7	Polarizing Microscope	Per Sample	200/-
8	Wear Tester	Per Sample	500/-
9	Micro-Hardness Tester	Per Sample	500/-
10	Master Abrasive Cutter with coolant supply	Per Sample	500/-
11	Dual Polisher Cum Grinder	Per Sample	500/-
12	XRD	Per Sample	1000/-

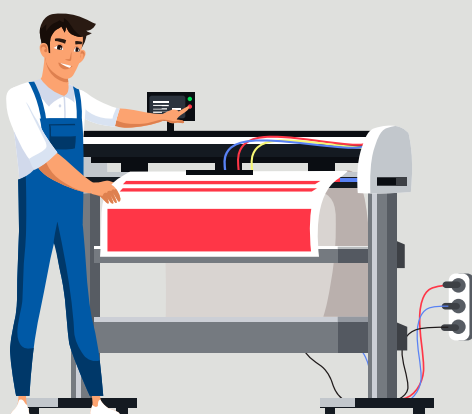
Payment Information

1. Payment should be made through the online transaction (NEFT) in favor of “The Registrar KLEF”.
2. Payment should include analysis charges + 18% GST.
3. Details of Bank account for online payment are as follows:
 - Account name: KLEF Consultancy Account
 - Account Number:
 - IFSC Code: SBIN0021361
 - Bank: SBI

Terms & Conditions

1. Sample preparation and Method development will be charged extra. Varies from material and method to method depending on the sample if required so.
2. Raw data (data tables) for XRD, Dielectric Probe, VNA and another instrument will be charged extra @Rs. 50.00 per Table
3. Courier charges extra (depend on destination) Rs. 50.00 (minimum)
4. Digital copy of data will be charged Rs. 50.00 per sample (excluding media cost)
5. Overlay charges- Rs. 50.00
6. GST: extra (as per government rule)
7. Payment: Advance
8. Urgent service: 100 % extra charges.
9. The analytical data /spectra are provided only for research/development purposes. These cannot be used as certificates in legal disputes.
10. Analysis charges including GST are payable in advance by crossed bank draft in favor of “The Registrar KLEF”.

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11. Sample and payment should be sent preferably in the same cover. Separate samples should be sent for different analysis. Sample will not be analysed until payment is received.
 12. In all correspondence related to analysis our reference number must be mentioned.
 13. Radio- active material, unstable and explosive compounds are not accepted for analysis.
 14. Research fellows and students are advised to send their application, and samples are recommended by their supervisor and Head of Department to avail the discount.
 15. As per the recent decision of CIF committee it is mandatory for user of CIF facility to acknowledge the facility in their research work and communicates the same to CIF, KLEF. AP, India. This condition is necessary for availing –discounted educational institute price—for educational institutes.
 16. For Lab visit, it is mandatory to take prior appointment from Co-ordinator, CIF before your visit. The application should be sent through department/Senior official of institute/Company. No deviation will be allowed for the timings.



Contact Details Center In-charge

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Professor - Addl. Dean (R & D)

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Phone: 9908243452

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