



ARCHBISHOP CASIMIR INSTRUMENTATION CENTRE

ST. JOSEPH'S COLLEGE

(Autonomous)

Special Heritage Status Awarded by UGC
Accredited at "A" Grade (3rd Cycle) by NAAC
College with Potential for Excellence by UGC

TIRUCHIRAPPALLI - 620 002



WWW.sjctni.edu

0431- 4226468

+91 98654 86528

aciclub.sjc@gmail.com

St. Joseph's College (Autonomous)
Tiruchirappalli - 620 002
Tamilnadu
India



Archbishop Casimir Instrumentation Centre



The University Grants Commission (UGC) has conferred on St. Joseph's College (Autonomous), Tiruchirappalli (SJC) affiliated to Bharathidasan University a singular honour "*College With Potential for Excellence*" (CPE) in 2004.

As a follow up to the (CPE) status, the college has established an instrumentation centre in the campus.

The late Most Rev. G. Casimir SJ, former Archbishop of Chennai -Mylapore (former Rector, Principal and HOD of Chemistry, SJC) pioneered research endeavour in SJC as early as 1965.

ACIC pays tribute to him by bearing his name. This center promotes Research, Lab-oriented Training and Teaching. The center is upgraded with new research grade equipments periodically.



*"A Fool can Become a Genius
When he Understands he is a Fool"*

But..

*"A Genius can Become a Fool
When he Understands he is Genius"!*

- Dr. A.P.J. ABDUL KALAM..!

Principal & Chairman:- Rev.Dr. M.Arockiyasamy Xavier,S.J.

Director:- Rev.Dr. S.John Britto S.J.

Deputy Director:- Prof. Mr. S.Dominique

Asst. Director:- Dr. S.Soosai Raj

Scientific Technicians:-

Mr. Y. Vincent Sagayaraj

Mr. J.Stalin Xavier

Working Hours:

9 am -4 pm

BENEFICIARIES:

List Of Colleges In Trichy Region

- ST.JOSEPH'S COLLEGE
- HOLY CROSS COLLEGE
- BISHOP HEEPER COLLEGE
- SR COLLEGE
- NATIONAL COLLEGE
- ERODE V.RAMASAMY COLLEGE
- JAMAL MOHAMMED COLLEGE
- CAUVERY COLLEGE WOMEN
- AVVM COLLEGE
- URUMU DHANALAKSHMI COLLEGE
- RAJESH COLLEGE
- NEHRU MEMORIAL COLLEGE
- SECHARD ARTS SCIENCE COLLEGE
- AG COLLEGE
- PCAS COLLEGE
- SARADHA COLLEGE
- RAJA'S COLLEGE
- PAVAI COLLEGE
- TGACR COLLEGE
- PSG COLLEGE
- ST. JOHN'S COLLEGE
- LOYOLA COLLEGE
- KSR THIRUNELVELI
- ADM COLLEGE
- SRI VASAVI COLLEGE
- MAHENDRA COLLEGE
- MP COLLEGE
- THIRUVALLUR COLLEGE
- SRINIVASAN COLLEGE
- AUT COLLEGE
- DS COLLEGE FOR WOMEN
- NIT COLLEGE
- RAJASARBOJI COLLEGE
- GOVT.ARTS COLLEGE - KUMBAKONAM
- GOVT. ARTS COLLEGE - KARUR
- NKR COLLEGE-NAMAKKAL
- NRCB-TRICHY
- SSC COLLEGE- SALEM
- INDIRAGANDHI COLLEGE-TRICHY
- IDHAYA COLLEGE FOR WOMAN- KUMBAKONAM
- VELLORE COLLEGE FOR WOMAN-ERODE
- GOVT ARTS COLLEGE - TRICHY
- BONSOCOUS COLLEGE-THNJAVUR
- AUT-RAMNAD COLLEGE
- AVS COLLEGE
- KUMARSWAMY COLLEGE
- KKC- COLLEGE-PDUKKOTTAI
- GOVT ARTS COLLEGE- DHARMAPURI
- GOVT.ARTS COLLEGE WOMEN - SALEM
- TE COLLEGE
- THR COLLEGE
- HOLY CROSS COLLEGE - NAGARCOIL
- GOVT. COLLEGE - KOVAI

- SRMV COLLEGE - KOVAI
- KSR ARTS SCIENCE COLLEGE
- LD COLLEGE-MADURAI
- RHT TRIC
- AP
- SVN-MADURAI
- STG COLLEGE
- ST COLLEGE
- TBML
- ADM
- PERIYOR EVR COLLEGE
- PLTS THANJAVUR
- ARUL ANANDAR MADURAI
- GOVT.ARTS COLLEGE (W) - PUDUKKOTTAI
- THE MDT HINDU COLLEGE
- CMS COLLEGE
- MATHIYAMMAL COLLEGE
- GRI DINDUGUL
- ALAGAPPA ARTS COLLEGE
- THIRUVIKKA COLLEGE
- ROVAR COLLEGE
- CPC COLLEGE
- FATHIMA COLLEGE
- SELVAMMA COLLEGE
- SS COLLEGE - NAGARCOIL
- SAKTHI COLLEGE-DINDUGAL
- SAAS COLLEGE - TRICHY
- BHARATH COLLEGE
- AA GOVT. ARTS COLLEGE - NAMAKKAL
- SAKTHI COLLEGE

LIST OF ENGINEERING COLLEGES

- J.J. COLLEGE OF ENGINEERING
- SAI RAM . ENGINEERING COLLEGE
- SARADHANATHAN COLLEGE OF ENGINEERING
- VELAMMAL. ENGINEERING COLLEGE
- SSN COLLEGE OF ENGINEERING
- ESWARI. ENGINEERING
- PR ENGINEERING. COLLEGE
- VSB ENGINEERING COLLEGE
- SRM ENGINEERING COLLEGE
- PACHAMUTHU ENGINEERING COLLEGE
- MAM ENGG COLLEGE
- SS ENGINEERING COLLEGE - PALANI

LIST OF UNIVERSITIES

- BHARATHIDHASAN UNIVERSITY
- PERIYAR UNIVERSITY
- ANNAMALAI UNIVERSITY
- ANNA UNIVERSITY
- BHARATHIYAR UNIVERSITY
- PRIST UNIVERSITY



SEM

Instrument Details

Make: CAREL ZEISS

Model: EVO 18

Specimen: Solids, Thin Films.

Description

SEM is the ideal Scanning Electron Microscope for biological and Physical science applications. True environmental SEM allowing samples to be examined in their natural state under a range of conditions including very high water vapor pressure up to 3000 Pa.

Uses

A scanning electron microscope (**SEM**) scans using focused electron beam over a surface to create an image. The electrons in the beam interact with the sample, producing various signals that can be used to obtain information about the surface topography and composition.

ACIC- INSTRUMENTATION CENTER

The tariff for the various studies at the instrumentation center is given below.



Particle Size Analyser

Instrument Details

Make: Micromeritics
Model: Nano Plus
Specimen: Nano Powder, Liquid

Description

The instrument can measure (Dilution Method) the particle size of samples suspended in liquids in the range of 0.1 nm to 12.3 μm with sample suspension concentrations from 0.00001% to 40%, and a sensitivity for molecular weight to as low as 250 Da.

Uses

Particle size analysis is used to characterize the size distribution of particles in a given sample. There are many different methods employed to measure particle size. Some particle size analysis methods can be used for a wide range of samples and some other particle analysis methods can be used for specific applications.

Working Cost for Sample for a Scholar			
S.NO:	Type of study	For SJC	Other Institutions
1	FTIR-spectroscopy	50	100
2	UV-Visible spectroscopy	50	100
3	Micro hardness Testing	50	100
4	Impedance analyzing/Cyclic voltammetry	50	100
5	Digital LCRZ Studies	50	100
6	HPLC Analysis		
	Analytical -	250	500
	Preparative -	500	750
7	Fluorescence spectrometry	50	100
8	SEM	250	500
9	Particle size Analyzing	50	100

Number of Colleges & Universities	Year	INSTRUMENTS								
		FT IR	UV	LCR	HARDNESS	Fluorescence	CV/IMP	HPLC	SEM	PZ
73	2012-13	1885	1862	147	314	181	223	212	-	-
69	2013-14	1707	1643	136	277	251	323	220	-	-
84	2014-15	1536	1144	201	296	256	158	140	-	-
94	2015-16	2535	1719	142	194	56	181	263	140	16
97	2016-17	2074	1014	50	125	200	298	59	352	98
100	2017-18	942	696	54	175	99	84	63	375	153
58	2018-19									
58	20/10/18	410	230	42	65	45	40	54	92	26

Feedback

Feedback Form

The ACIC Instrumentation Lab has most of the important instruments required for scientific research. We get our results earlier. Also any missing results can be followed up quickly. The lab technicians are very helpful and timely inform us when the results are ready.

Thank You,
 Anurita Anandi
 Dept. of Botany
 Bishay Heber College.

S.No	Date	Name	College/University/Institution	No. of Samples	Instrument Used	Signature	Remarks
2019	20/10/2018	C. Suresh Kumar	Govt. Arts College, Mysore	5	UV	[Signature]	Good
2020	20/10/2018	T. Srinivasulu Reddy	Y.S.R. D.C. College, Tadipatri	1	UV	[Signature]	Good
2021	20/10/2018	B. Srinivasulu Reddy	A.P.J.S.S. College, Tadipatri	1	UV	[Signature]	Good
2022	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2023	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2024	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2025	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2026	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2027	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2028	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2029	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2030	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2031	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2032	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2033	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2034	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2035	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2036	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2037	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2038	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2039	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2040	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2041	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2042	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2043	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2044	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2045	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2046	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2047	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2048	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2049	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good
2050	20/10/2018	S. Srinivasulu Reddy	Govt. Arts College, Mysore	2	UV	[Signature]	Good



Hydraulic Pellet Machine

Instrument Details

Make: Kimaya Engineers
Model: Table Top
Capacity: 15 Tons
Usable Platen Size: 13 mm. dia
Speciman: Solids.

Description

The anhydrous **KBr** salt is used for the pellet makeup

Uses

It is used to form Pellets for **IR -FTIR Solid Sampling / Analytical Purpose.**

Most commonly used Pellet of 13 mm dia.



Fourier Transform Infra Red Spectrometer

Instrument Details

Make: Perkin Elmer
Model: Spectrum Two
Range: 4000cm⁻¹ to 400cm⁻¹
Specimen: Solids, Liquids

Description

Fourier Transform Infrared Spectroscopy, also known as **FTIR Analysis** or **FTIR Spectroscopy**, is an analytical technique used to identify organic, polymeric, and in some cases, inorganic materials

Uses

This technique measure the **Absorption** of infrared radition by the sample material as the **Frequency absorptions**. The infrared absorption bands identify **Molecular band vibration and Structure**



UV -Visible Spectrometer

Instrument Details

Make: Perkin Elmer

Model: Lambda 35

Range: 190nm to 1100nm

Speciman: Solids, Liquids, Thin films

Description

Description

Ultraviolet and visible (UV-Vis) absorption spectroscopy is the measurement of the attenuation of a beam of light after it passes through a Sample or after Reflection from a sample surface.

Absorption measurements can be at a single wavelength or over an extended spectral range

Uses

UV-VIS Theory. Ultraviolet and visible radiation interacts with matter which causes electronic transitions (promotion of electrons from the ground state to a high energy state). The ultraviolet region falls in the range between 190-380 nm, the visible region fall between 380-750 nm.



Micro Hardness Tester

Instrument Details

Make: Shimadzu

Model: HMV-2T

Description

Micro Hardness Testing is a method of determining a material's hardness or resistance to penetration when test samples are very small or thin, or when small regions in a composite sample or thin film are to be measured.

Uses

Hardness test methods use an indenter probe that is displaced into a surface under a specific load. The indentation typically has a defined dwell time. **Micro hardness testing**, with applied loads less than 10 N, is typically used for smaller samples, thin specimens, plated surfaces or thin films.



LCRZ - Meter

Instrument Details

Make: Jognic's
Model: 2816B
Range: Multi range for (C R L)
Frequency: 50Hz to 200 KHz

Description

LCR meters are measuring instruments that measure a physical property known as impedance. Impedance, which is expressed using the quantifier Z , indicates resistance to the flow of an AC current. It can be calculated from the current I flowing to the measurement target and the voltage V across the target's terminals.

Uses

An LCR meter is a type of electronic test equipment used to measure the inductance (L), capacitance (C), and resistance (R) of an electronic component. In the simpler versions of this instrument the impedance was measured internally and converted for display to the corresponding capacitance or inductance value.



Cyclic Voltmeter/ Impedance Analyser

Instrument Details

Make: Princeton Applied Research
Model: Versa STAT MC
Frequency: 1Hz to 1MHz
Specimen: Solid, Liquid

Description

Cyclic Voltammetry (CV) is an electrochemical technique which measures the current that develops in an electrochemical cell under conditions where voltage is in excess of that predicted by the Nernst equation. CV is performed by cycling the potential of a working electrode and measuring the resulting current.

Uses

Cyclic Voltammetry (CV) is a powerful and popular electro-chemical technique commonly employed to investigate the reduction and Oxidation processes of Electro Chemically active species.



High-Performance Liquid Chromatography (HPLC)

Instrument Details

Make: Shimadzu
Model: UFLC
Detector: UV-Vis detector
Column: C-18

Description

When a mixture of compounds is passed through the **HPLC** column, it gets separate into its components before it exits from the column. The basic principal of **HPLC** is the partitioning the analytes between the solid phase and the mobile phase.

Uses

High-performance liquid chromatography (HPLC) is a chromatographic technique used to separate a mixture of compounds into individual ones in the pure form. The main purpose for using **HPLC** is for identifying, quantifying and purifying the individual components of the mixture.



Fluorescence Spectrophotometer

Instrument Details

Make: Perkin Elmer
Model: LS 45
Range: 200nm to 900nm
Specimen: Solids, Liquids

Description

In fluorescence spectrometry both an excitation spectrum (the light that is absorbed by the sample) and / or an emission spectrum (the light emitted by the sample) can be measured.

Uses

A fluorometer or fluorimeter is a device used to measure Parameters of Fluorescence, its Intensity and Wavelength distribution of Emission spectrum after Excitation by a certain spectrum of light. These parameters are used to identify the presence and the amount of specific Molecules in a Medium.