



Shri Sharda Bhavan Education Society's

YESHWANT MAHAVIDYALAYA NANDED

The Best College award By S.R.T.M.University, Nanded College with Potential for Excellence
(Status Awarded By UGC)

Reaccredited "A" Grade (III Cycle) by NAAC

DST-FIST Sponsored College

Annual report of Common Instrumentation Centre, Department of Chemistry (2022-2023)

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❖ **How Common Instrumentation Centre Founded**

Yeshwant Mahavidyalaya is one of the oldest and reputed College in Marathwada region. So that our college got various funds / under different scheme from our Government, and UGC for academic and research development. With the help of these funds, our collage purchases different instruments like FT-IR, UV, GC-MS, DTG, AS, HPLC, RF Spectrophotometer etc. These all instruments are installed in one lab and form Common Instrumentation Centre. The common instrumentation centre (CIC) is a research service centre established in 2009. The main aim of forming CIC Lab is, to get the research benefit to our college and other colleges, and University student also.

❖ **Why Common Instrumentation Centre Important**

We know that science is different from any other subject. To understand its concepts, one has to look behind the books and conventional classroom teaching. Effective teaching and learning of science involve seeing, handling, and manipulating real objects and materials. The knowledge that students attain in classrooms would be ineffective unless they observe the process and understand the relationship between action and reaction. Effective teaching and learning of science involves a perpetual state of show and tell. Good collages combine classroom teaching with laboratory experiments to ensure that their students understand each and every concept thoroughly.

It is also believed that laboratory teaching and experiments that are being conducted there help encourage deep understanding in students. Students are able to retain the knowledge for longer when they see the experiments being performed in front of their eyes.

CIC lab equipment/Instruments allows students to interact directly with the data compiled. They get a first-hand learning experience by performing various experiments on their own. Students are made to use the models and understand different scientific theories and concepts. It is also found that science lab equipment and supplies make teaching and learning easy both for the teachers, as well as for the students. There are several scientific theories and concepts that are difficult to explain directly from the books. Anatomy models, and in science kits for instance make it easy to understand complex theories of science.

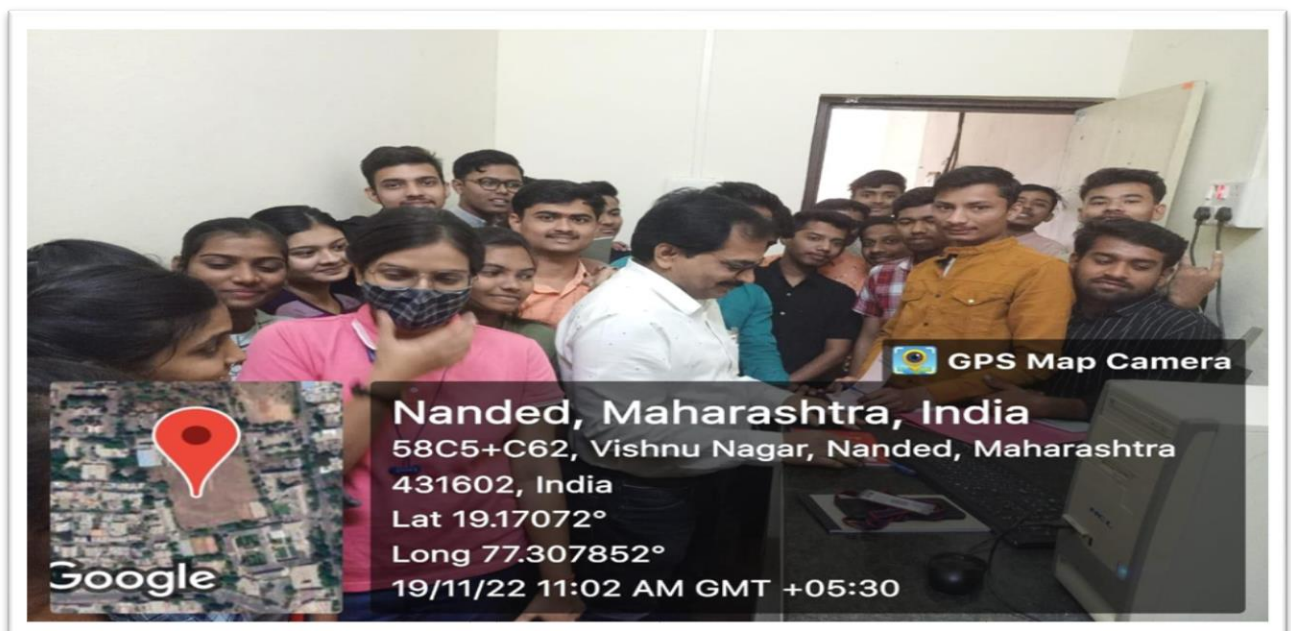
❖ About Workshop / Hand-on Training conducted during 2020- 2021

Every year our chemistry department conduct instrumentation Hands-On Training for PG /UG students. The main objective of the Hands-on training workshop is to enhance the quality of education in the collage in undergraduate and postgraduate students using the practical application of instruments.

The workshop will focus on two aspects one is, Enhance the practical knowledge of students. And second is the research benefits of instruments for both faculty and students for their technological development.

Two Days Workshop on “Instrumentation Hands-on Training for UG Chemical Engineering Students For UG Chemical Engineering Students” was organized by Department of Chemistry for UG Chemical Engineering Students and Teachers on 19th & 21st November 2022 in the Smart classroom of Yeshwant Mahavidyalaya, Nanded. In this event, a total of four sessions, including Inaugural, Technical and valedictory sessions were organized. Total 27 participants from S.G.G.S. Institute of Engineering Technology, Vishnupuri Dist. Nanded colleges and faculty members, research students and UG students were present in the workshop.





❖ Hand-on Training conducted during 2022- 2023

Workshop session on “Instrumentation Hands-on Training Program” was organized by Department of Chemistry for Pollution Control Officers on 21th February 2023 in the Smart classroom of Yeshwant Mahavidyalaya, Nanded. Total 18 participants from Central Pollution Control board was present.





❖ **Benefits of CIC lab for M.Sc Students / Researchers (PhD students)**

- The common instrumentation centre (CIC) is a research service centre that gives support services in the areas of UV, FTIR, GC-MS, AS, DTG, RF and HPLC to researchers of our colleges as well as other institutions on concession basis.
- CIC lab provides research services to all researchers at a very fast and very low cost as compared to other research service institutes.
- CIC lab provides Hands-on training. This instrument handling knowledge useful for PG students for getting a job in multinational industries as well as in research institutes.
- Developing practical skills. In CIC lab experiences, students may learn to use the tools and conventions of science. For example, they may develop skills in using scientific equipment correctly and safely, making observations, taking measurements, and carrying out well-defined scientific procedures.
- Laboratory experiences may promote a student's ability to identify questions and concepts
- CIC lab experiences may enhance student understanding of specific scientific facts and concepts and of the way in which these facts and concepts are organized in the scientific disciplines.
- Developing teamwork abilities. CIC lab experiences may also promote a student's ability to collaborate effectively with others in carrying out complex tasks, to share the work of the task, to assume different roles at different times, and to contribute and respond to ideas.
- Especially our CIC lab most use full to the chemistry & biology researcher for purification, structure identification and determination of physical parameters of newly synthesised compounds or compound those obtained from natural sources in laboratory.

❖ **Benefits of CIC Lab to Farmers**

- CIC lab also allows some soil samples analysis projects from government administrative organisations of Maharashtra state. Soil test reports will generally provide you with appropriate fertilizer application recommendations for phosphorous, potassium, copper, zinc etc.
- CIC lab provides soil testing services to all farmers of the Nanded district at very low cost. In this service, CIC lab provides the micronutrient analysis of soil samples like Fe, Cu, Mn, Zn etc.
- Soil testing provides a farm management tool with a potential benefit to the farmer to increased yields
- Reduced operating costs and superior environmental risk management.
- Additional benefits include; improved crop maturity and quality
- Higher tolerance to disease and pest damage, and increased growth.

Working Instrument present in CIC Lab

Sr. No.	Name of Instruments
1.	Spectrofluorophotometer (RF)
2.	UV-Spectrophotometer (UV)
3.	High-Performance Liquid Chromatography (HPLC)
4.	Gas Chromatography-Mass Spectrometry (GC-MS)
5.	Atomic Absorption Spectrophotometer (AAS)
6.	Differential Thermogravimetric Analyser (DTG)

Non-working Instrument present in CIC Lab

Sr. No.	Name of Instruments
1.	Fourier-Transform Infrared Spectrophotometer (FT-IR)
2.	Spray Pyrolysis (SP)
3.	Bio-Rad Gel Doc XR & Chemi Doc XRS (Bio-Rad)

AAS analysis performed in 2022-2023

Sr. No	Name of Requisitioned	Type of Instrument used	No of Sample	Date of Analysis	Occupation	Recite Number	Total amount paid
01	Amol Anandrao Bhandare	AAS	01	19/05/22	Farmer (Nanded)	DUJ0182993	250/-
02	Narsinghgaro Hanmantrao Patil	AAS	01	19/05/22	Farmer (Nanded)	DUJ0183708	250/-
03	Narendrada Chavan	AAS	01	19/05/22	Farmer (Nanded)	DUJ0758324	250/-
04	Shivajirao Devran Shinde	AAS	01	16/06/22	Farmer (Nanded)	DUJ1796795	250/-
05	Sakharam Ramrao Sagade	AAS	01	16/07/22	Farmer (Nanded)	DUJ1800359	250/-
06	Miss. Bodhankar A.S.	AAS	0	21/07/22	P.hd Student (SRTMU)	DUJ4241862	7,500/-
07	Vaishnavi Sahebrao Raut	AAS	03	17/08/22	P.hd Student (SRTMU)	DUJ5717397	750/-

UV analysis performed in 2022-2023

Sr. No	Name of Requisitioned	Type of Instrument used	No of Sample	Date of Analysis	Occupation	Recite Number	Total amount paid
01	Shivaji Raut	UV	02	04/11/22	P.hd Student (SRTMU)	DUJ173 5518	1500/-

RF analysis performed in 2022-2023

Sr. No	Name of Requisitioned	Type of Instrument used	No of Sample	Date of Analysis	Occupation	Recite Number	Total amount paid
01	Dr. K. A. Bhogale	RF	02	28/05/22	Professor (SRTMU)	DUJ063 1761	200/-
02	Dr. S. V. Khansole	RF	01	17/08/22	Professor (YMN)	DUJ571 8554	100/-

DTG analysis performed in 2022-2023

Sr. No	Name of Requisitioned	Type of Instrument used	No of Sample	Date of Analysis	Occupation	Recite Number	Total amount paid
01	P. A. Pawar	DTG	06	29/11/22	P.hd Student (SRTMU)	R5467	3000/-
02	Mr. Lande	DTG	06	29/11/22	P.hd Student (SRTMU)	R6	3000/-

GC-MS analysis performed in 2022-2023

Sr. No	Name of Requisitioned	Type of Instrument used	No of Sample	Date of Analysis	Occupation	Recite Number	Total amount paid
01	Mukesh Yadav	GC-MS	01	21/01/23	P.hd Student (YMN)	R5975	500/-
02	P. Pawar	GC-MS	01	05/04/23	P.hd Student	R7	4800/-

The total out come from CIC lab for year 2020-2021 is (**24,700**) **Twenty foure thousand and seven hundred** Rupees only

Submitted by,

Prof. S. P. Vartale

In-charge CIC

Dept. of chemistry

Y. M. Nanded