



Shri Sharda Bhavan Education Society's
Yeshwant Mahavidyalaya, Nanded – 431602 (MS)
(Affiliated to Swami Ramanand Teerth Marathwada University, Nanded)
NAAC Reaccredited “A” Grade (IIIrd Cycle)
‘COLLEGE WITH POTENTIAL FOR EXCELLENCE STATUS’
Establishment Year: 1963

Report on
“Common Instrumentation Centre (CIC)”

Department of Chemistry,
PG Research Centre,
Yeshwant Mahavidyalaya, Nanded-431602 (MS)

Dr. S.P. Vartale
Professor & In-charge of CIC
Yeshwant Mahavidyalaya, Nanded

Dr. Ganeshchandra N. Shinde
Principal
Yeshwant Mahavidyalaya, Nanded

❖ Introduction:

The common instrumentation centre (CIC) established in the Department of Chemistry, Yeshwant Mahavidyalaya, Nanded. This is the only facility center available amongst around 800 institutions which are affiliated to two universities of Marathwada region. It was established with the aim to help the students and researchers to conduct their research work by using the analytical techniques at low cost. The CIC dedicated to the development of future technical work force and inspires research and farmers for their soil analysis activities. Currently the CIC provides a wide-ranging array of sophisticated instrumentation services. With the support of different funding agencies like DST and UGC, we have purchased sophisticated analytical instruments like High-Performance Liquid Chromatography, Fourier Transform Infrared Spectroscopy, UV-Vis Spectrophotometer, Double Beam Spectrophotometer, Spectrofluorophotometer, Atomic Absorption spectrometer and Differential Thermal Analysis .

❖ Objectives of the CIC:

- The main objective of CIC Lab is to increase the quality of education and research in this region for undergraduate and postgraduate, Ph.D. students using the practical application of instruments.
- To enhance the practical knowledge of students.
- To provide hands-on experience with instruments to students, researchers & faculty of this institution and other institutions.
- To offer soil testing facility to farmers in this area.
- To arrange chemical analysis facility to researcher of in this region.

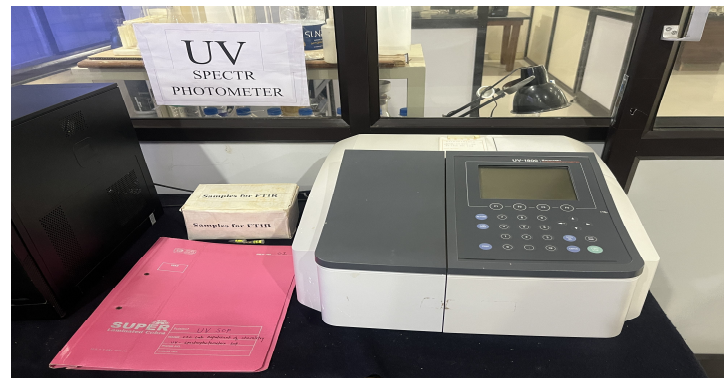
List of Instruments

Sr. No.	Name of Instruments	Company Name and Model Number
01	High-Performance Liquid Chromatography	Agilent Technology. India 1120 Compact LC
02	Fourier Transform Infrared Spectroscopy	SHIMADZU Ltd. India FT-IR 8400S
03	UV-Vis Double Beam Spectrophotometer	SHIMADZU Ltd. India UV-1800
04	Spectrofluorophotometer	SHIMADZU Ltd. India RF 5301PC
05	Atomic Absorption spectrometer	SHIMADZU Ltd. India AA-7000
06	Differential Thermal Analysis	SHIMADZU Ltd. India DTG-60.Serial No.C305653-00748
07	Gel doc System	Bio Rad
08	Gas chromatography mass spectrophotometer	SHIMADZU Ltd. India QP 2010
09	Spray pyrolysis	Opto Mechanical Pvt Ltd HO-TH-04

❖ Photographs of CIC Instruments



1. Fourier-Transform Infrared Spectroscopy



2. UV-Visible Spectrophotometer



3. High-Performance liquid chromatography



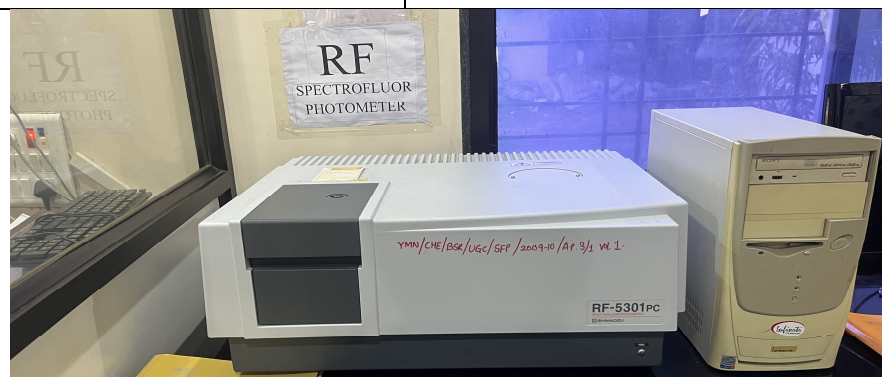
4. Atomic Absorption Spectrophotometer



5. Gas chromatography-Mass spectrometry



6. Differential Thermogravimetric Analyzer



7. Spectrofluorophotometer



8. Spray Pyrolysis



9. Gel Documentation System

The CIC is equipped with different sophisticated analytical equipment for meeting the needs of researchers and framers in all areas of Agricultures, Small Scale Industries, Science and Technology. Any individual researcher or group of researchers from any academic institutions, Industrial R&D, Start-ups etc. can utilize the services of these analytical equipment facilities on nominal charges.

❖ **Benefits of CIC for Students, Researchers and Faculty:**

CIC is a research service centre that gives support services in the areas of UV, FTIR, GC-MS, AAS, 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 low cost as compared to other research service institutes. CIC lab provides Hands-on Training to UG/PG students for getting a job in multinational industries as well as in research institutes. Hands-on training develop practical skills in students and faculty.

We have generated consultancy (2018-2022) through spectral analysis is Rs 1,50,900/-

1. Workshop on Instrumentation Hands-on Training for PG Chemistry Students (2019-20)

We arranged two day's workshop on "Instrumentation Hands-On Training for PG Chemistry Students" was organized by CIC Department of Chemistry for Postgraduate Students and Teachers on 27th & 28th Feb 2020 in the Yeshwant Mahavidyalaya, Nanded. In this event, a total four sessions including Inaugural, Technical and valedictory sessions were organized. Total 41 PG students participated from our colleges in the workshop.



2. Workshop on Instrumentation Hands-on Training for PG Chemistry Students (2021-22)

Three Days Workshop on “Instrumentation Hands-On Training for PG Chemistry Students” was organized by Department of Chemistry for Postgraduate Students on 23rd, 24th & 27th December 2021 in the Yeshwant Mahavidyalaya, Nanded. In this event, total four sessions including Inaugural, Technical and valedictory sessions were organized. Total 40 participants from our college were present in the workshop.



❖ Benefits of CIC for Students of Engineering College:

➤ Workshop on “Instrumentation Hands-on Training for UG Chemical Engineering Students”

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



❖ **Benefits of CIC to Pollution Control Board Officers:**

The International conference and training program organized by SGGS institute of engineering, Vishnupuri Nanded on “**Enforcement of Hazardous and other wastes (Management and Trans boundary Movement) {HOWM} Rule-2016**” Sponsored by State Pollution Control Board. Schedule from 20th February, 2023 to 22nd February, 2023 at Dept. of Chemical Engineering SGGSIE&T, Nanded. (M.S.)

➤ **Workshop session on “Instrumentation Hands-on Training Program:**

We conducted One Day session in the workshop on “Instrumentation & Hands-on Training Program” organised by CIC, Department of Chemistry for Pollution Control Officers on 21th February 2023 in the Yeshwant Mahavidyalaya, Nanded. Total 17 participants from Central Pollution Control board across the India was present.

List of Participants

Sr. No.	Name of Participant	Designation	Address	Mobile No. and E-mail
1.	Mr. Ashish G Patel	DEE	Gujarat Pollution Control Board, Head Office, Gandhinagar, (Gujarat)	9428458356 uh-gpcb- hazw@gujarat.gov.in
2.	Mr. Shubham R Sonawadia	AEE	Gujarat Pollution Control Board, Regional Office, Ahmedabad (E), (Gujarat)	8460580588 ro-gpcb-ahme@gujarat.gov.in
3.	Mr. S. Sreenivasa Rao	AEE, R.O.	Andhra Pradesh Pollution Control Board, Vijayawada. (A.P.)	9177303208 rogtr-ee1@appcb.gov.in

4.	Ms. Md. Nazeena Begum	AEE, Z.O.	Andhra Pradesh Pollution Control Board, Vijayawada.(A.P.)	9177303295 zovja-jcee@appcb.gov.in
5.	Mr. Digvijay Singh	A.S.O.	Bihar State Pollution Control Board, Parivesh Bhawan, Patliputra, Patna (Bihar)	7485808250 digvijay.12@gmail.com
6.	Mrs. Leeta Soren	Dy. Env. Scientist	State Pollution Control Board, Odisha, Nilakanthanagar, Unit-VIII, Bhubaneswar (Odisha).	9437339037 leetaspcb@gmail.com
7.	Mrs. Sandhyayani Marandi	Dy. Env. Engineer	State Pollution Control Board, Odisha, Nilakanthanagar, Unit- VIII, Bhubaneswar (Odisha).	9438883915 sandhyayani@gmail.com
8.	Dr. Lipika Kalo	Assistant Env. Engineer	State Pollution Control Board, Odisha, Nilakanthanagar, Unit-VIII, Bhubaneswar (Odisha).	9531042937 lipika.kalo@gmail.com
9.	Mr. Rajendra U Patil	S.R.O.	Maharashtra State Pollution Control Board, Sub Regional Office, Nanded. (M.S.)	9923480797 sronanded@mpcb.gov.in
10.	Mr. Shripad Kulkarni	S.R.O.	Maharashtra State Pollution Control Board, Sub Regional Office, Parbhani. (M.S.)	9860078298 sroparbhani@mpcb.gov.in
11.	Mr. Santosh Kumar Basethia	Scientific Officer	Rajasthan State Pollution Control Board, Headquarter, Jaipur, (Rajasthan)	9461339151, 7073398777 skbasethia@yahoo.com

12.	Mr. Biswajit Chakraborty	Technical Officer	West Bengal Pollution Control Board, Paribesh Bhawan, Bidhannagar, Kolkata (West Bengal).	6290066471 chakrabortyjit007@gmail.com
13.	Ms. Mousumi Bardalai	Sr. Env. Engineer	Pollution Control Board, Guwahati, (Assam)	8638017640, 8876508998
14.	Mr. Siddarth Gautam	Env. Engineer	Delhi Pollution Control Committee, Dept. of Environment, Govt. of NCT, Delhi, Kashmere, (Delhi)	9717593535 siddhartha.g.dpee@nic.in
15.	Mr. Kevisede Pucho	Asst. Env. Engineer	Nagaland Pollution Control Board, Dimapur, (Nagaland)	9366530861 puchokevisede@gmail.com
16.	Mr. Paresh Chavda	Dy. Env. Engineer	Gujarat Environment Management Institute (GEMI), Sector 25, GIDC, Gandhinagar (Gujarat).	9909419199 paresh.gemi@gmail.com
17.	Mr. Vimal Lalpurwala	Asst. Env. Engineer	Gujarat Environment Management Institute (GEMI), Sector 25, GIDC, Gandhinagar (Gujarat).	9427275373 vimals.gemi@gmail.com

Photographs: Pollution Control Board Officers Workshop



❖ Skill Oriented Courses for P.G. Students:

We also run the Add-on certificate course of PG students to increase the practical knowledge and skills of the students. Duration of course is three months. We have arranged four add on course for P.G. chemistry Students from 2019 to 2022.





GPS Map Camera

Nanded, Maharashtra, India

5895+RJ4, Bhagya Nagar Road, Vishnu Nagar, Nanded, Maharashtra 431602, India

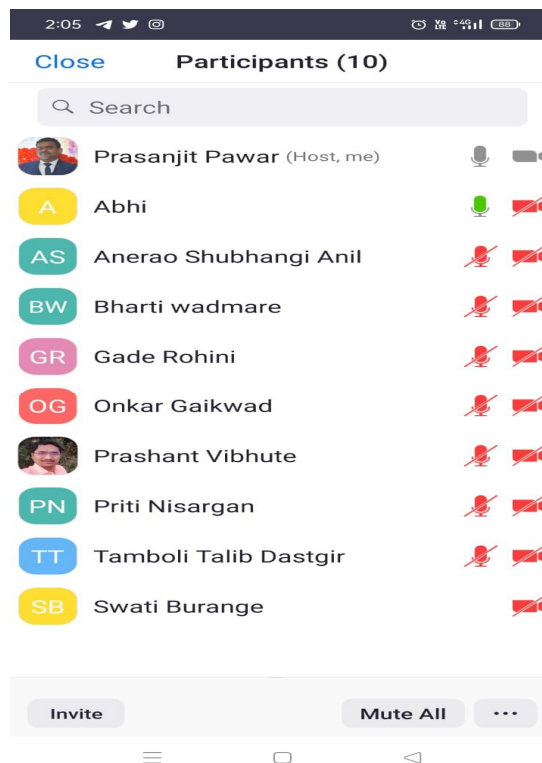
Lat 19.169604°

Long 77.309061°

27/04/23 01:53 PM GMT +05:30

❖ Linkages with Other Institutes:

Through CIC our college made linkage with other three institutes namely M.S.G. Arts Science & Commerce college Malegaon camp (Nashik), Dr. Shantilal Devsey Arts College and Commerce and Science college Wada Dist. Palghar & Balbhim Arts, Science & Commerce College, Beed. As per the linkage made by CIC, Department of Chemistry arranged instrument handling workshop to increase the knowledge and awareness of handling sophisticated instrument like UV, FTIR, GC-MS, AAS, RF, DTG etc. for UG, PG students and Faculty through Online mode.



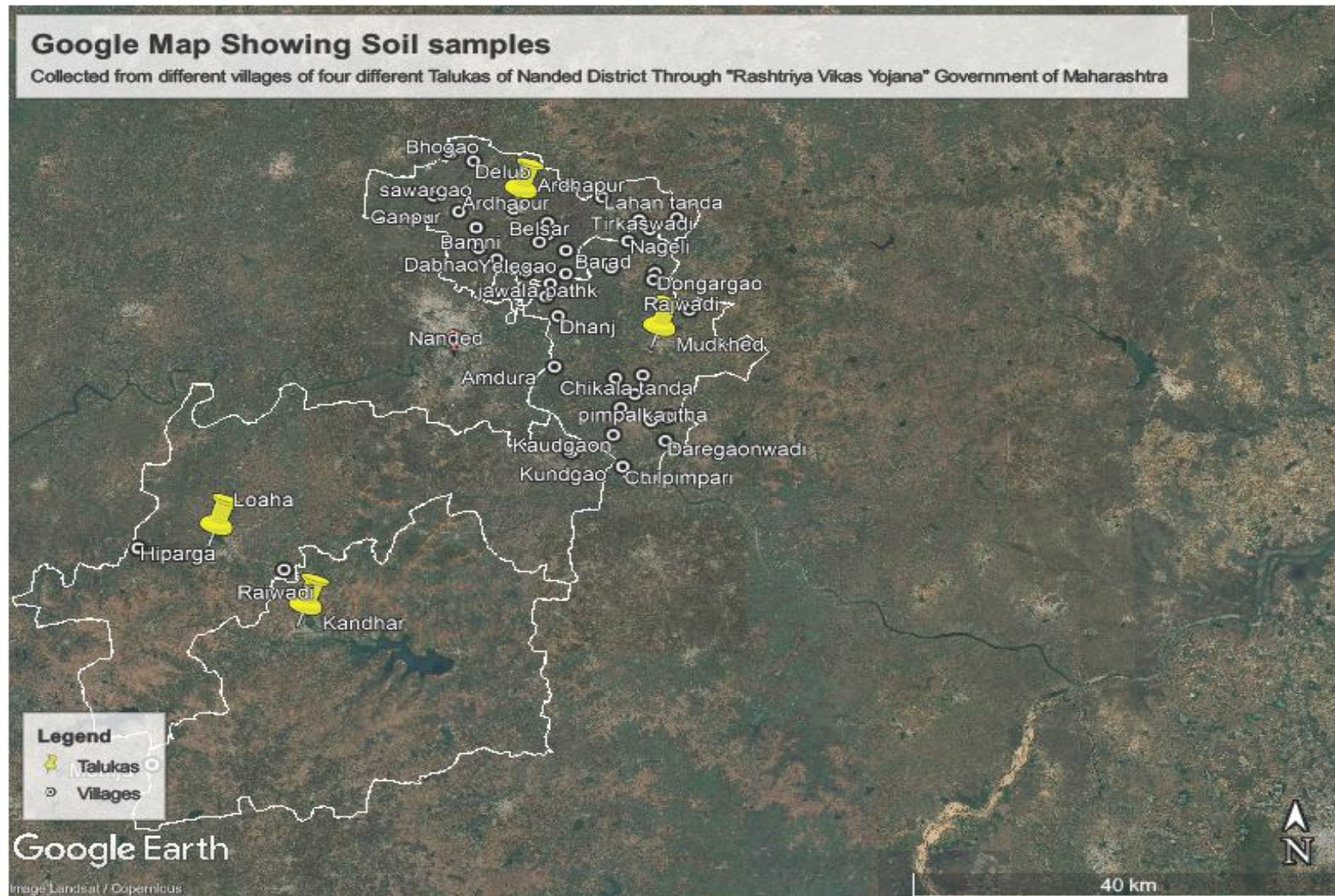


❖ Benefits of CIC to Farmers:

Over fourteen thousand soil samples of farmers from 136 villages analysed by CIC. CIC lab also undertake soil sample analysis projects from government administrative organization of Maharashtra state (Rashtriya Krishi Vikas Yojana 2017-2023). In the soil testing we provide the micronutrient analysis of soil samples like Fe, Cu, Mn, Zn etc. We also provide analysis of pH level, Organic Carbon, SSP (Single Super Phosphate) and electroconductivity. On the basis of reports we recommend to use of appropriate fertilizer to farmers for increase their productivity of soil. **Total consultancy generated through soil testing as on date 31-03-2023 by CIC is Rs 23,12,910/- and with remaining of balance in hand after required expenditure is Rs 17,54,564/-**



❖ **Google Map showing soil samples collected from different villages of four different Talukas of Nanded District through “Rashtriya Krishi Vikas Yojana” Government of Maharashtra**



❖ Total Consultancy Generated by CIC through spectral analysis and soil sample testing (in Rs):

Spectral analysis (2018-19 to 2022-23) : 01, 50,900/-

Soil Testing (Up to 2023) : 23, 12,910/-

Total Consultancy Generated : 24, 63,810/-

News Published in Local Newspapers



नांदेड : यशवंत महाविद्यालयात अत्याधुनिक उपकरणे हाताळण्याची दोन दिवसीय कार्यशाळा घेण्यात आली.

यशवंत महाविद्यालयामध्ये उपकरणे हाताळण्याची कार्यशाळा

नांदेड, ता. २३ (बातमीदार) : श्री शारदा भवन एज्युकेशन सोसायटी संचलित यशवंत महाविद्यालयात ता. १९ आणि ता. २० नोव्हेंबर रोजी अत्याधुनिक उपकरणे हाताळण्याची कार्यशाळा झाली. या कार्यशाळेच्या उद्घाटन सोहळ्यात कार्यक्रमाच्या अध्यक्षस्थानी प्राचार्य डॉ. गणेशचंद्र शिंदे यांनी सध्याच्या तंत्रज्ञानमय जीवनात उपकरणे चालविण्याचे कौशल्य अत्यंत महत्वाचे आहे. ज्यामुळे विविध क्षेत्रात कार्य

करण्याची संधी प्राप्त होत असते, असे प्रतिपादन केले.

प्रारंभी प्रास्ताविकात डॉ. संभाजी वर्ताळे यांनी विभागातील विविध उच्च दर्जाच्या उपकरणांची माहिती दिली व या उपकरणाचा विद्यार्थ्यांना व संशोधकांना कशा प्रकारे लाभ होतो, ते स्पष्ट केले. या दोन दिवशीय कार्यशाळेत ऑटोमॅटिक स्पेक्ट्रोफोटोमीटर, जीसीएमएस स्पेक्ट्रोफोटोमीटर, एफ.टी. आय. आर. स्पेक्ट्रोफोटोमीटर, टी. जी.

ए. डी. टी. ए. इत्यादी उपकरणे हाताळण्याचे विद्यार्थ्यांना कौशल्य देण्यात आले. डॉ. संदीप खानसोळे यांनी सूत्रसंचालन करून आभार मानले. याप्रसंगी रसायनशास्त्र विभागप्रमुख डॉ. महेश कळंबकर, डॉ. कविता केरे, डॉ. एम. ए. बशीर, डॉ. विजय भोसले, डॉ. शिवराज शिरसाठ, डॉ. सुभाष जुने, तंत्रज्ञ प्रसेनजित पवार, प्रा. एस. डी. पाटील, डॉ. कवळे आदींची उपस्थिती होती.

यशवंतमध्ये अत्याधुनिक उपकरणे हाताळण्याची कार्यशाळा संपन्न

नांदेड दि. २३ - श्री शारदा भवन एज्युकेशन सोसायटी संचलित यशवंत महाविद्यालयात दि. १९ व २० नोव्हेंबर रोजी अत्याधुनिक उपकरणे हाताळण्याची कार्यशाळा उत्साहात संपन्न झाली.

या कार्यशाळेच्या उद्घाटन सोहळ्यात कार्यक्रमाचे अध्यक्ष माजी प्र- कुलगुरू तथा विद्यमान प्राचार्य डॉ. गणेशचंद्र एन. शिंदे यांनी, सध्याच्या तंत्रज्ञानमय जीवनात उपकरणे चालविण्याचे कौशल्य अत्यंत महत्वाचे आहे. ज्यामुळे विविध क्षेत्रात कार्य करण्याची संधी प्राप्त होत असते, असे प्रतिपादन केले.

प्रारंभी प्रास्ताविकात डॉ. संभाजी वर्ताळे यांनी, विभागातील विविध अतिशय उच्च दर्जाच्या उपकरणांची माहिती दिली व या उपकरणाचा विद्यार्थ्यांना व संशोधकांना कशा प्रकारे लाभ होतो, ते सविस्तरपणे स्पष्ट केले.

या दोन दिवशीय कार्यशाळेत ऑटोमॅटिक स्पेक्ट्रोफोटोमीटर, जीसीएमएस स्पेक्ट्रोफोटोमीटर, एफ.टी. आय. आर. स्पेक्ट्रोफोटोमीटर, टी.जी.ए. डी.टी.ए. इत्यादी उपकरणे हाताळण्याचे विद्यार्थ्यांना कौशल्य देण्यात आले. कार्यक्रमाचे सूत्रसंचालन व आभारप्रदर्शन डॉ. संदीप खानसोळे यांनी केले.



‘यशवंत’मध्ये अत्याधुनिक उपकरणे हाताळण्याची कार्यशाळा संपन्न



नांदेड (प्रतिनिधी) – श्री शारदा भवन एज्युकेशन सोसायटी संचलित यशवंत महाविद्यालयात दि. १९ व २० नोव्हेंबर रोजी अत्याधुनिक उपकरणे हाताळण्याची कार्यशाळा उत्साहात संपन्न झाली.

या कार्यशाळेच्या उद्घाटन सोहळ्यात कार्यक्रमाचे अध्यक्ष माजी प्र-कुलगुरू तथा विद्यमान प्राचार्य डॉ. गणेशचंद्र एन. शिंदे यांनी सध्याच्या तंत्रज्ञानमय जीवनात उपकरणे चालविण्याचे कौशल्य अत्यंत महत्त्वाचे आहे. ज्यामुळे विविध क्षेत्रात कार्य करण्याची संधी प्राप्त होत असते, असे प्रतिपादन केले. प्रारंभी प्रास्ताविकात डॉ. संभाजी वर्ताळे यांनी विभागातील विविध अतिशय उच्च दर्जाच्या उपकरणांची माहिती दिली व या उपकरणांचा विद्यार्थ्यांना व संशोधकांना कशा प्रकारे लाभ होतो, ते सविस्तरपणे स्पष्ट केले. या दोन दिवशीय कार्यशाळेत ऑटोमॅटिक स्पेक्ट्रोफोटोमीटर, जीसीएमएस स्पेक्ट्रोफोटोमीटर, एफ.टी. आय.आर. स्पेक्ट्रोफोटोमीटर, टी.जी.ए. डी.टी.ए. इत्यादी उपकरणे हाताळण्याचे विद्यार्थ्यांना कौशल्य देण्यात आले. कार्यक्रमाचे सूत्रसंचालन व आभार प्रदर्शन डॉ. संदीप खानसोळे यांनी केले. याप्रसंगी रसायनशास्त्र विभागप्रमुख डॉ. महेश कळंबकर, डॉ. कविता केंद्रे, डॉ. एम.ए. बशीर, डॉ. विजय भोसले, तंत्रज्ञ प्रसेनजित पवार, प्रा. एस.डी. पाटील, डॉ. कवळे आदींची उपस्थिती होती.

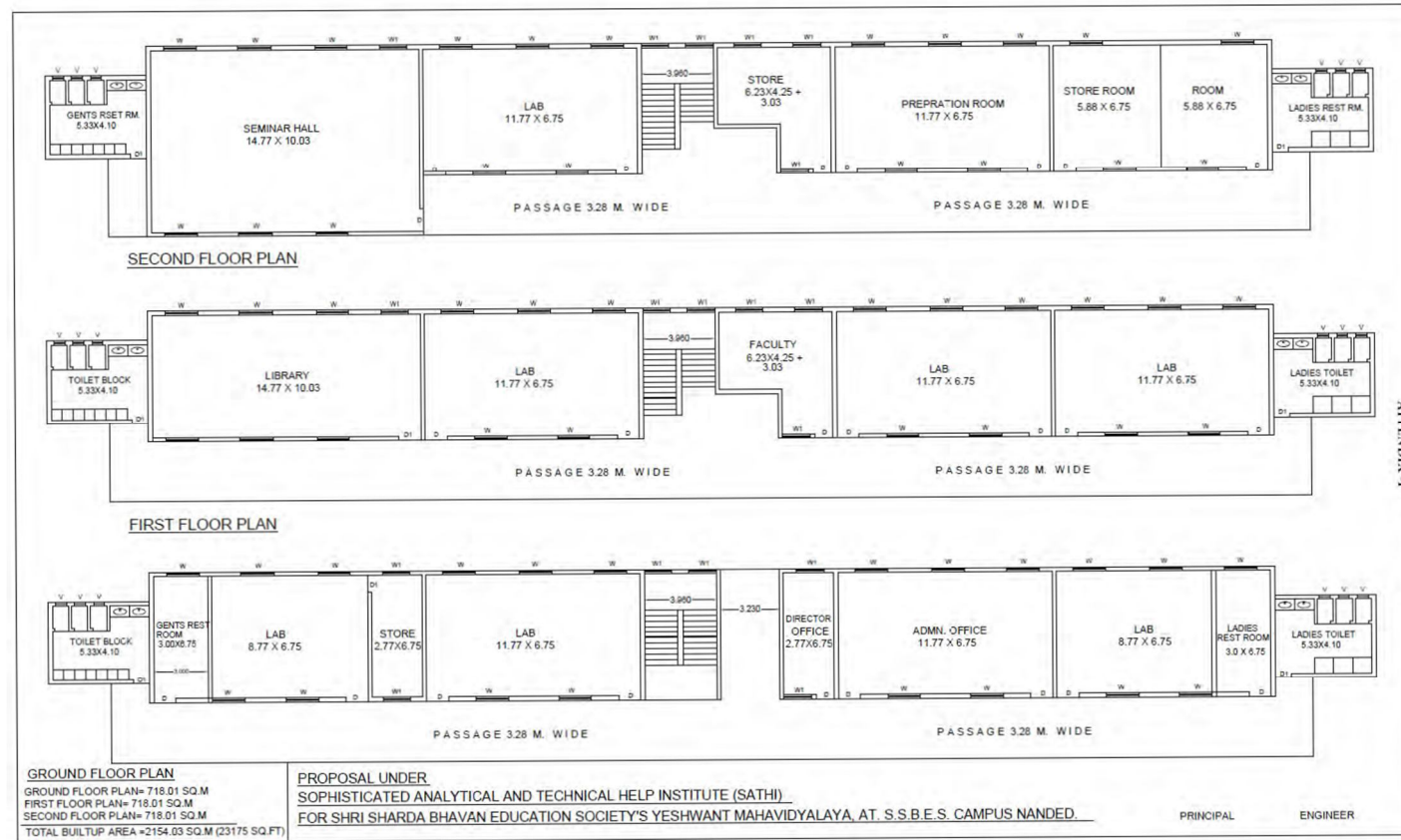
Future Plan: To extend the facilities of common instrumentation centre, we have been submitted a proposal on Sophisticated Analytical and Technical Help Institutes (SATHI) to Ministry of Science and Technology, Department of Science and Technology, Government of India.

	
Proposals	
Under	
<u>Sophisticated Analytical and Technical Help Institutes</u> <u>(SATHI)</u> PROGRAMME	
Submitted to	
GOVERNMENT OF INDIA MINISTRY OF SCIENCE & TECHNOLOGY DEPARTMENT OF SCIENCE & TECHNOLOGY TECHNOLOGY BHAVAN, NEW MEHRAULI ROAD, NEW DELHI - 110 016	
Submitted by	
<u>YESHWANT MAHAVIDYALATYA,</u> <u>NANDED 431602</u> <u>M.S</u>	

Proposed Instruments In SATHI Proposal:

S.	Equipments	Qty.	Justification	1 Year	2 Year	3 Year	4 Year	Total
1 .	Electrochemical work station	1	It has varies used to understand electrochemical and redox behavior of organic and inorganic molecules for their material applications for their use in battery. Also, it has utility in water splitting for generation of energy.	0	0	2200000	0	2200000
2 .	FT-IR spectrophotometer	1	It is very important instrument for Chemistry, Pharmacy, Forensic, Material research. It can also benefit small and startup industries in surrounding area.	2300000	0	0	0	2300000
3 .	Fume Hoods	1	To exhaust hazardous fumes, vapors and gaseous generated during experimental of chemical process. It reduces risk of exposure to toxic fumes.	160000	0	0	0	160000
4 .	Hot plate	1	To make film uniform, to perform chemical reactions under heating conditions, to dissolve substances with heating	100000	0	0	0	100000
5 .	Kalweka Multipurpose Main Drive With All Attachments	1	All-purpose equipment with all the multi-attachments units such as Ball mill, Wet granulator, planetary mixer, tablet coating pan etc.	0	0	0	1800000	1800000
6 .	Liquid Chromatography and Mass Spectroscopy (LC-MS)	1	This directly detect mass of compound with percentage of desired compound and purity. It is one of the most important instruments for research in Chemistry, Pharmacy, Forensic, Material as well as dairy science research. It can also benefit to small and startup industries in surrounding area.	0	9000000	0	0	9000000
7 .	Sonicator	1	Creating emulsions, dispersing nanoparticles, and reducing the size of particles in suspension	43000	0	0	0	43000
8 .	Spin coater	1	Uniform thin film formation	0	0	0	60000	60000
9 .	Tablet Press With Pre-Compression	1	This small and sturdy single sided rotary tablet press is designed with GMP considerations	0	0	0	900000	900000
10 .	Vacuum pumps	2	For Filtration and distillation	160000	0	0	0	160000
11 .	Weighing balance	2	To measure weight of object (chemical)	200000	0	0	0	200000
Total				2963000	9000000	2200000	2760000	16923000

Future Extending Floor Plan of CIC



Submission Receipt

Department of Science & Technology

Subject: Acknowledgement of Online Project Submission & Temporary Registration No.



Online Project Management System

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