SHRI SHIVAJI EDUCATION SOCIETY, AMRAVATI'S

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

RE-ACCREDITED BY NAAC WITH 'A' GRADE (VERY GOOD) WITH A C.G.P.A. OF 3.10

COLLEGE WITH POTENTIAL FOR EXCELLENCE

CENTRAL INSTRUMENTATION CELL (C.I.C.)

INFORMATION BROCHURE

CENTRAL INSTRUMENTATION CELL (C.I.C.)

SHRI SHIVAJI SCIENCE COLLEGE,
SHIVAJI NAGAR, MORSHI ROAD, AMRAVATI – 444 603
MAHARASHTRA – INDIA

College Website: www.shivajiscamt.org
E-mail ID: *cicshivajisciamt@gmail.com*
Office Telephone: 0721 – 2665485
Office Fax: 0721 – 2660855

Sikshan Maharshi, Krushiratna

Dr. Panjabrao Alias Bhausaheb Deshmukh

The First Union Minister of Agriculture, Government of India

Founder President, Shri Shivaji Education Society, Amravati

SHRI SHIVAJI EDUCATION SOCIETY, AMRAVATI

The **Shri Shivaji Education Society, Amravati** is a premier educational institution of Central India with branches in all the districts of Vidarbha in Maharashtra. It is registered as a Public Charitable Trust (R.N. F/89). Its Founder President was the late **Dr. Panjabrao Alias Bhausaheb Deshmukh** (First Union Minister of Agriculture, Govt. of India) who established various schools, colleges, hostels and other teaching and technical institutions and devoted all his energy for strengthening and enlarging the activities of the Shri Shivaji Education Society, Amravati.

The Society was registered in December 1932. In 1958, it had one primary school, seven middle schools and eight colleges. Today it runs 40 Senior Colleges, 54 Jr. Colleges, 80 Middle Schools, 12 Training Institutes and 51 Hostels mainly in the region of Vidarbha but also in other parts of the state. The educational institutions cover areas like Agriculture, Arts, Bio-technology, Computers, Education, Engineering, Horticulture, Information Technology, Law, Medicine, Micro-biology, Physical Education and the Pure Sciences. It also runs a Polytechnic for boys and girls at Amravati.

The Shivaji Education Society was founded by Dr. Panjabrao Alias Bhausaheb Deshmukh in 1931-32. Along with other members, Bhausaheb devoted himself to educate the people by establishing school and colleges far and wide in the Vidarbha. The Society was awarded the "**Dr. Babasaheb Ambedkar Dalit Mitra**" Award in 1993-94 by the Govt. of Maharashtra. In the year 1999-2000, the Society was awarded by the **'Gadge Maharaj Memorial Award**', on 5th September, 2000.In the year 2011, Society was awarded by the "**Leadership Award for Excellence in Education**" (Feb 11, 2011) and "**Maharashtra Nirmata Award**" (May 2, 2011).The Govt. of Maharashtra declared the Society as the "**Best Administered Society**" in the state and awarded it a cash award of Rs. 1 Lakh. In its citation, the State Government formally recognized the seminal contribution made by the Society in the field of education and cultural advancement.

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI

With the introduction of Science faculty in Shri Shivaji Arts and Commerce College, Amravati in 1958, is it separated from parent institute as an independent **Shri Shivaji Science College, Amravati** in 1969. Now Shri Shivaji Science College, Amravati evolved as Premier Institution for imparting formal education in the Science stream and is affiliated with **Sant Gadge Baba Amravati University, Amravati**. College conveniently accessible from all parts of Amravati city has spacious and evergreen campus. College offers Junior, Under Graduate, Post Graduate and Research education in Science. College has permanent, fulltime, competent staff, research guides with all state of art facilities for science education and research in different science disciplines. The college is NAAC re-accredited "A Grade" College with CGPA 3.13 in Third Cycle. The College has also earned a special reputation for being conferred with the status of a "College with Potential for Excellence" by the UGC for second phase. Additional feathers in the crown of the college are – identification by Department of Science and Technology, GoI for grants under FIST and Sant Gadge Baba Amravati University's nomination as "Lead College" for its area. The College is also credited by Rajiv Gandhi Science and Technology Commission with the sanction of grants of Rs. 2.5 Crore to setup an institution as "Science and Innovation Activity Centre".

SHRI SHIVAJI SCIENCE COLLEGE, AMRAVATI – 444 603 (M. S.) – INDIA

CENTRAL INSTRUMENTATION CELL (C.I.C.)

ADVISORY COMMITTEE

Sr. No.	Name	Designation	Position	Contact Number
1.	**Dr. V. G. Thakare**	Principal, Shri Shivaji Science College, Amravati	Chairman	+91 – 9422858934
2.	**Dr. G. N. Choudhari**	Prof. and Head, Department of Chemistry	Member	+91 – 9423425052
3.	**Dr. V. B. Bhatkar**	Head, Department of Physics	Member	+91 – 9960120900
4.	**Dr. H. S Lunge**	IQAC Coordinator	Member	+91 – 8275217293
5.	**Dr. S. P. Ingole**	Head, Department of Environmental Science	Member Coordinator	+91 – 7875805464

WORKING COMMITTEE

Sr. No.	Name	Designation	Position	Contact Number
1.	**Dr. V. G. Thakare**	Principal, Shri Shivaji Science College, Amravati	Chairman	+91 – 9422858934
2.	**Dr. S. P. Ingole**	Head, Department of Environment Science	Prof. In Charge	+91 – 7875805464
3.	**Dr. P. R. Mandlik**	Associate Professor, Department of Chemistry	Member	+91 – 9403866611
4.	**Dr. G. A. Wagh**	Associate Professor, Department of Zoology	Member	+91 – 9822204070
5.	**Dr. D. D. Khedkar**	Associate Professor, Department of Botany	Member	+91 – 9423622287
6.	**Dr. P. A. Nagpure**	Associate Professor, Department of Physics	Member	+91 – 9404376940
7.	**Mr. Satish Dashore**	Central Instrumentation Cell	Technical In-Charge	+91 –8625972454

Central Instrumentation Cell (C.I.C.) of Shri Shivaji Science College, Amravati is established by the funds provided by University Grand Commission (UGC), New Delhi. To cater the needs of research and developmental activities of all departments within campus and also to serves the needs of researchers from Universities, Research Institutions, Industries and farmers from all over the country. Central Instrumentation Cell has facilities to carry out various analytical, spectroscopic measurements, chromatography and sample characterization by visual and photographic analysis. C.I.C. has state-of-the-art in analytical facilities, experienced faculties to conduct various scientific researches, workshops and trainings. The following table provides Analytical Instruments available in C.I.C. of Shri Shivaji Science College, Amravati– 444 603 (M.S.), India.

Sr. No.	Name of Instrument	Model No./Specifications	Company/Brand
1.	**Atomic Absorption Spectrophotometer (AAS)**	AA – 7000	Shimadzu, Japan
2.	**High Performance Liquid Chromatography (HPLC)**	UFLC ▪ SPD – 20A (Prominence UV/VIS detector) ▪ LC – 20AD (Prominence Liquid Chromatography)	Shimadzu, Japan
3.	**FT-IR Spectrophotometer (FTIR)**	IR Affinity – 1	Shimadzu, Japan
4.	**Ultraviolet and Visible Absorption Spectrophotometer (UV-VIS)**	UV – 1800	Shimadzu, Japan
5.	**Polymerase Chain Reaction (PCR)**	Veriti 96-Well Thermal Cycler	Applied Biosystems, California
6.	**Gel Documentation**	E-Gel Imager	Life technologies, California
7.	**Trinocular Axio Lab.A1 Fluorescence Microscope with Digital Camera**	Axio Lab A1 (with Measurement Software)	Carl-Zeiss, Germany
8.	**Trinocular Stemi 2000 Stereo Zoom Microscope with Digital Camera**	Stemi 2000(with Measurement Software)	Carl-Zeiss, Germany
9.	**Trinocular Phase Contrast Microscope with Digital Camera**	Primostar HAL	Carl-Zeiss, Germany
10.	**Transition Temperature measurement Setup for Superconducting Sample**	-	Indosaw, India
11.	**Analytical Balance**	AUX 200 (Accuracy 0.01)	Shimadzu, Japan

The users can avail these facilities by submitting the samples along with the duly filled requisition form for a nominal charge.

1. ATOMIC ABSORPTION SPECTROPHOTOMETER (AAS) – AA – 7000 Shimadzu, Japan Price : 11,59,735/- INR

Atomic Absorption Spectrophotometer is used to estimate elemental substances present in the formulated products. Some of the elements present due to their low absorption character and toxic element present in low concentration are estimated by the use of a hydrated generator. AA – 7000 is a computer controlled atomic absorption system providing automatic sequential element detection from the sample. The AA-7000 series of Atomic Absorption Spectrophotometers features high-sensitivity analysis, flexible system configuration, and a compact footprint for user-friendly operation. In addition, the AA-7000 systems are the first AAs to employ a vibration sensor as standard. The AA-7000 series ensures efficient and comfortable operation for absorption spectroscopy.

APPLICATION:

Absorption spectroscopy is employed as an analytical chemistry tool to determine the presence of a particular substance in a sample and, in many cases, to quantify the amount of the substance present.

- ✓ To detect different elements from sample
- ✓ To know the absorption spectra of trace element
- ✓ To analyze the micronutrients in the fertilizers
- ✓ To analyze the micronutrients in the soil sample

SAMPLE REQUIREMENTS:

Sample required is about 10 ml in liquid state (digested if applicable). Melting/Boiling point and tentative molecular weight of the sample should be specified.

AVAILABLE LAMPS: Ca, Cd, Mn, Na, Pb, Li etc

2. High Performance Liquid Chromatography (HPLC) – Shimadzu, Japan Price : 10,07,636/- INR

Liquid chromatography separation speed becomes faster using analytical columns with ultra-fine particle packing and by increasing the mobile phase flow rate. When the actual analysis time is reduced, other factors required for the analytical cycle time become important, such as time required for auto-sampler injection movement, gradient delay time and system conditioning time.

Prominence UFLC offers the solution for these factors, greatly reducing the total analysis cycle time, which ultimately enhances laboratory productivity. The following is a comparison of chromatograms between Prominence UFLC with Shim-pack XR-ODS, a new reversed-phase column, and conventional LC using a conventional column (150mmL. x 4.6mm i.d., 5um). In conventional LC, benzo-fluoranthene isomers (peaks 7 and 8) with separation 1.2 were eluted in 35 minutes. Using Prominence UFLC with the Shim-pack XR-ODS, the same components were eluted in 3.5 minutes while maintaining the same excellent resolution. Retention time for benzo-perylene (peak 9) is reduced from 50.4 min. to5.07 min., while its theoretical plate number changes slightly from 10,600 to 11,900.Prominence UFLC reduces analysis time to 1/10 of conventional LC while keeping separation efficiency.

A variety of automated features, such as automatic purging, shortens the time required for system start-up via manual operation. To reduce the delay time of concentration change at the column inlet during gradient operation, and the conditioning time for initialization, UFLC utilizes a smaller system inner volume.

These Prominence UFLC features demonstrate excellent gradient analysis. The data below shows ultra high-speed gradient analysis of about 30 seconds for one analysis cycle. Prominence UFLC offers superb high speed and resolution, without applying high pressure, by optimizing system and column efficiency.

APPLICATION:

- ✓ Chemical Assay
- ✓ Related Substances separation
- ✓ Analytical Method Validation
- ✓ Stability Studies
- ✓ Compound Identification

SAMPLE REQUIREMENTS:

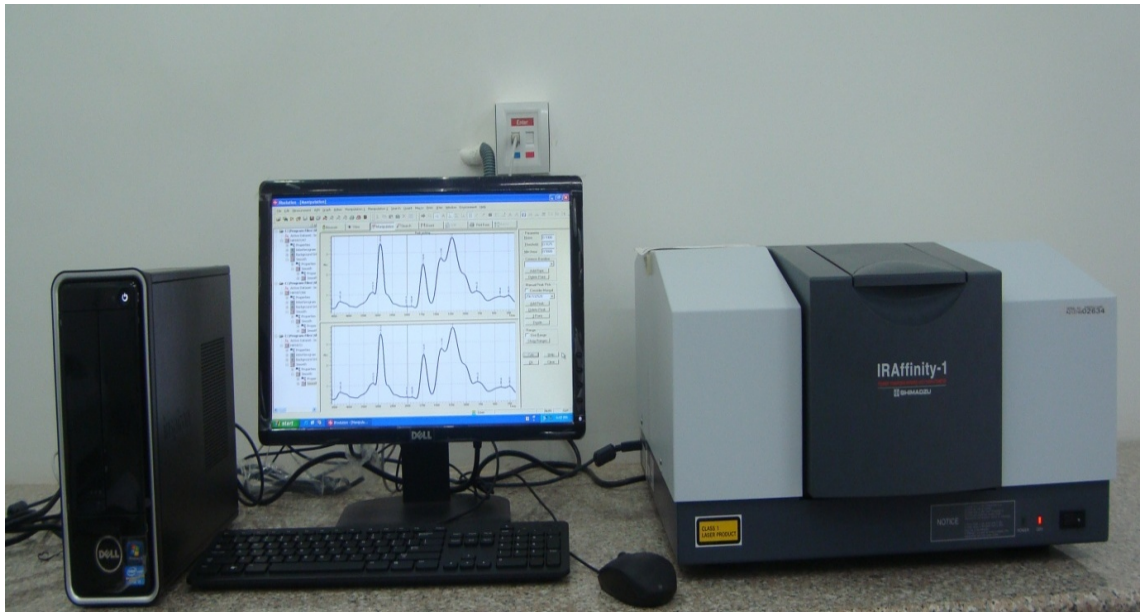
Sample required is about 50 µl in liquid state. Melting/Boiling point and tentative molecular weight of the sample should be specified.

3. FT-IR Spectrophotometer (FTIR) – Shimadzu, Japan — Price : 8,73,252/- INR

IR spectroscopy involves the absorption of infrared radiation having energy equal to the vibrational energy levels of the molecules under investigation. FTIR spectroscopy provides structural information of the samples. The low energy infra red radiations are appropriate to execute molecular vibrations. The absorption of energy causes the bonds between atoms to be executed to higher energy levels. This results in absorption bonds of specific frequencies. From these characteristics bands, one can determine a great deal about the structure of a molecule. Thus IR spectra provide strong evidence for compound. Solid sample are analyzed in KBr matrix.

APPLICATION:

- ✓ Identification of functional groups and characterization of materials.
- ✓ Study of reaction mechanism, phase transition and intermolecular interaction.
- ✓ Quality control of pharmaceutical products, petroleum products and food materials.



SAMPLE REQUIREMENTS:

Quantity of sample required is 50 mg in solid/liquid state for FT-IR. For solution studies solvent should be specified.

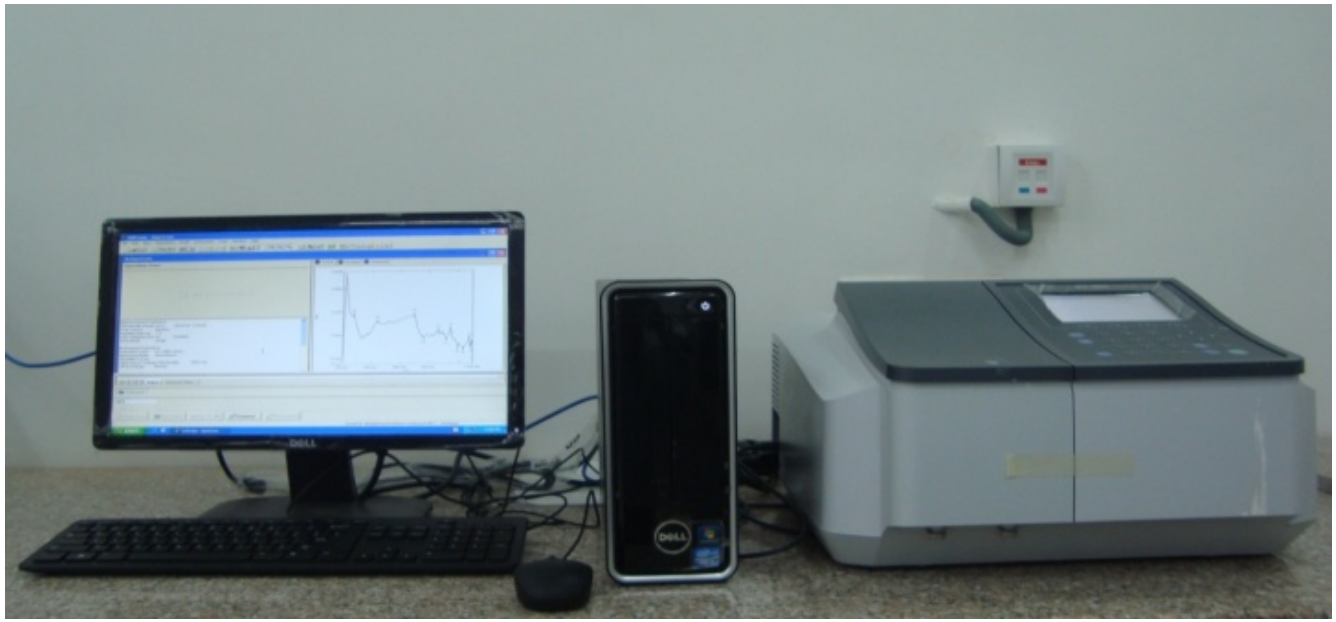
4. Ultraviolet and Visible Absorption Spectrophotometer (UV-VIS) – Shimadzu, Japan

Price : 3,74,878/- INR

The absorption and emission by samples in the ultraviolet and visible region due to electronic transitions are measured. Electronic transitions depend on the environment of the sample. Boasting the highest resolution (1 nm) and the smallest footprint of all compact standalone UVs in its class, the UV-1800 Spectrophotometer delivers better performance and ease of use with powerful functionality and UV Probe software, supplied as standard. Offering an array of user-friendly features, the UV-1800 easily satisfies pharmacopoeia requirements as well as the demands of university laboratories, government agencies, and the food industry.

APPLICATION:

- ✓ Qualitative and quantitative studies of various chemical species
- ✓ Study of molecular structure
- ✓ Reaction kinetics
- ✓ Study of colour centers



SAMPLE REQUIREMENTS:

Sample required is 10 ml. solution or 5 - 100 mg in solid state. Solvents should be specified for solution studies.

5. Polymerase Chain Reaction (PCR) - Veriti 96-Well Thermal Cycler,0.2 mL – Applied Biosystems

Price : 2,53,125/- INR

The Veriti 96-Well Thermal Cycler is both a standard and fast thermal cycler in one. It provides flexibility to go fast to achieve results that are comparable to standard amplification for a variety of templates in a fraction of the time. When using the GeneAmp Fast PCR Master Mix on the Veriti p6-Well Thernal Cycler, amplicons of 500 bp can be generated in under 25 minutes, some in as little as 10 minutes. Larger fragments, up to 2 kb, can be amplified in approximately 40-50 minutes with the Master Mix.

Additionally, the Veriti 96-Well Thermal Cycler features the added control of the VeriFlex Blocks which gives six independent temperature blocks to provide precise control over PCR optimization. The ability to run fast or standard PCR methods offers flexibility to shorten PCR cycling time.

APPLICATION:

- ✓ To increase the DNA volume for DNA sequencing protocol
- ✓ To increase the specific DNA fragment for cloning purpose
- ✓ It is used in forensic studies

SAMPLE REQUIREMENTS:

Sample required is 0.05 µL for a complete well (multiply by 96). Primer, PCR buffer, ddNTPs etc

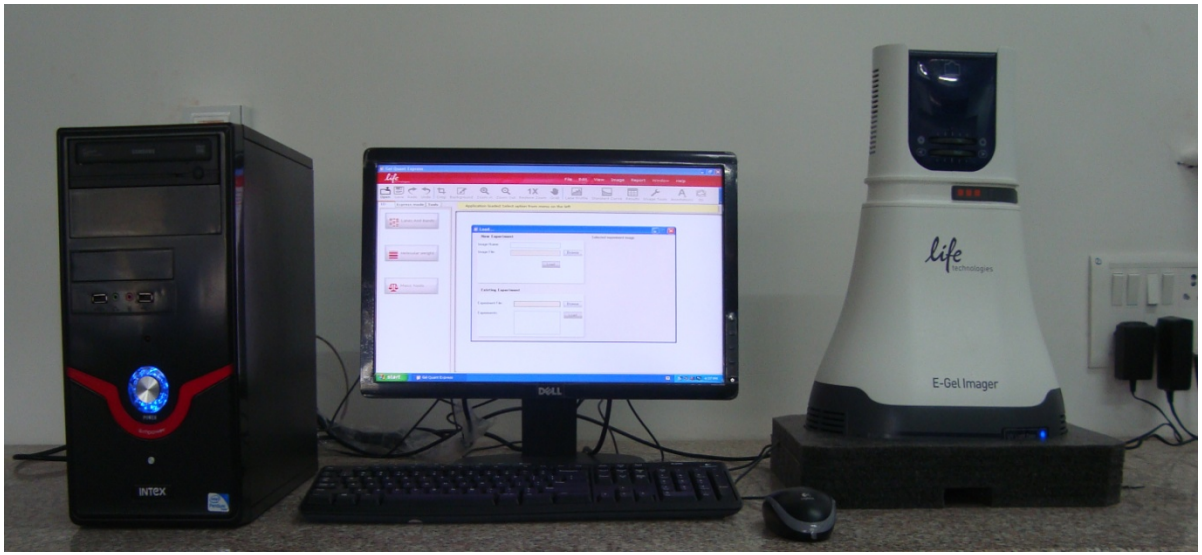
6. Gel Documentation - E-Gel Imager – Life technologies

Price : 3,55,093/- INR

The E-Gel Imager System makes Agarose gel documentation and analysis personal. The least expensive imaging system available with a scientific-grade camera fits on most desktops, light enough to be moved easily. Simple setup and intuitive software for analysis of E-Gel gels or other Agarose gels. The software and powerful camera capture sharp, rich images, even during a run that can be analyzed using powerful Gel Quant Express software. The E-Gel Imager System is the perfect solution for documenting any E-Gel precast Agarose gel, and it's great self-cast gels as well.

APPLICATION:

- ✓ To capture the image of different electrophoresis gels
- ✓ To document best view for you gels
- ✓ To differentiate the Nucleic Acid bands



SAMPLE REQUIREMENTS:

Sample required stain gels (Electrophoresis gels).

7. Trinocular Axio Lab.A1 Fluorescence Microscope with Digital Camera – Carl-Zeiss, Germany **Price : 5,38,313/- INR**

Axio Lab.A1 places strong emphasis on ergonomic features, because continuous microscope use is often associated with discomfort, particularly in the neck. With Axio Lab.A1 users are able to examine slides with a favorable viewing position, keeping the neck and shoulder muscles relaxed. The height of the microscope is continuously adjustable by 50mm. In addition the tube can be swiveled from 8°-33° continuously. IC²S optics, the infinity colour-corrected system, is available only from Carl Zeiss. The system guarantees brilliant, colour-corrected and high-contrast results, meeting all the demands placed on image quality. Axio Lab.A1 ensures easy-to-use LED-fluorescence with 2 LED positions and the well known standard push-and-click-modules from Carl Zeiss. In comparison to standard HBO illumination the LED fluorescence is much safer, more energy efficient, quicker and easier to use. Additional advantages: No warm-up and cool-down times and no need to change or adjust lamps. The fluorescent marker FITC is primarily used for antigen-antibody reactions in the field of immunology. FITC binds to the antibody molecules and emits an intense green fluorescence upon excitation with the 470 nm LED. In the field of hematology, the usual diagnostic approach to blood disorders is blood counting and blood fi lm examination.

APPLICATION:

- ✓ Wide range of taxonomic and identification strategies
- ✓ Identification of species
- ✓ Digital representation
- ✓ Cytological studies

SAMPLE REQUIREMENTS:

Sample required as per standard identification of the sample specified.

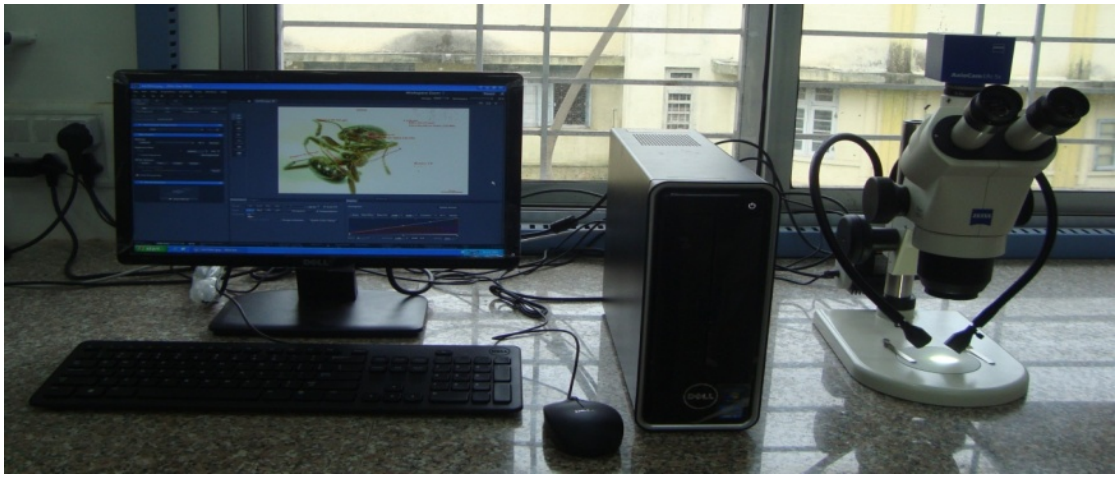
8. Trinocular Stemi 2000 Stereo Zoom Microscope with Digital Camera – Carl-Zeiss, Germany **Price : 4,89,375/- INR**

The Stemi 2000 Stereo Zoom Microscope offers the cost advantage of the Greenough design, while boasting surprising performance features. ZEISS's excellent optics, Stemi 2000 stereo-microscopes provide brilliant, sharp, distortion-free and highly resolved images – even at the important low magnificence. 7:7:1 zoom range is provided for the minute structures. The wide field of view already offered by the basic configuration lets you overview an objects area greater than 35 mm in diameter. The 0.3x supplementary lens expands this to 118mm.

The modular construction of the Stemi 2000 Stereomicroscopes with their sensibly designed interfaces permits a broad spectrum of uses. Allowing epi-, transmitted and mixed illumination techniques in bright or dark-field, the Stemi 2000 system includes various fiber-optic illuminators and cold light sources of different wattages to suit different applications. The Stemi 2000 Stereo Zoom Microscope is connected with the AxioCam ERc5s digital microscope camera for digital photography and video recording. The 5 megapixel CMOS camera AxioCam ERc5s is an affordable documentation system that offers speed, ease of operation, and straightforward technology. This cam-era can be used as a full-fledged microscope camera for education and routine requirements or as a video device for observation with a fast and high-quality live image.

APPLICATION:

- ✓ Identification of the species
- ✓ To study morphological characters of various specimens
- ✓ To study specially micro specimens



SAMPLE REQUIREMENTS:

Sample required as per standard identification of the sample specified.

9. Trinocular Phase Contrast Microscope with Digital Camera – Primostar – Carl-Zeiss, Germany **Price : 1,82,000/- INR**

Techniques of digital holography are improved in order to obtain high-resolution, high-fidelity images of quantitative phase-contrast microscopy. In particular, the angular spectrum method of calculating holographic optical field is seen to have significant advantages including tight control of spurious noise components. Holographic phase images are obtained with 0.5 µm diffraction-limited lateral resolution and largely immune from the coherent noise common in other holographic techniques. The phase profile is accurate to about 30 nm of optical thickness. Images of SKOV-3 ovarian cancer cells display intracellular and intra-nuclear organelles with clarity and quantitative accuracy.

Primo Star has been developed with long-term use and great durability in mind. It incorporates all the experience gathered by Carl Zeiss in the field of light microscopy, adapted specifically for educational purposes. It is easy to operate, robust, durable, quality optics from Carl Zeiss, numerous innovative solutions, flexible through its modularity and excellent price/performance ratio. This microscope - together with its many practical accessories - can be used for education, in the laboratory, doctors-practice and in the field. Genuine ZEISS. It comes with a Binocular or Trinoklulare (photo) tube, and fixed-Köhler illumination for standard training, or full-Köhler for classical microscopy at the highest level.

APPLICATION:

- ✓ Identification of the species
- ✓ To study morphological characters of various specimens
- ✓ Digital representation
- ✓ Cytological studies

SAMPLE REQUIREMENTS:

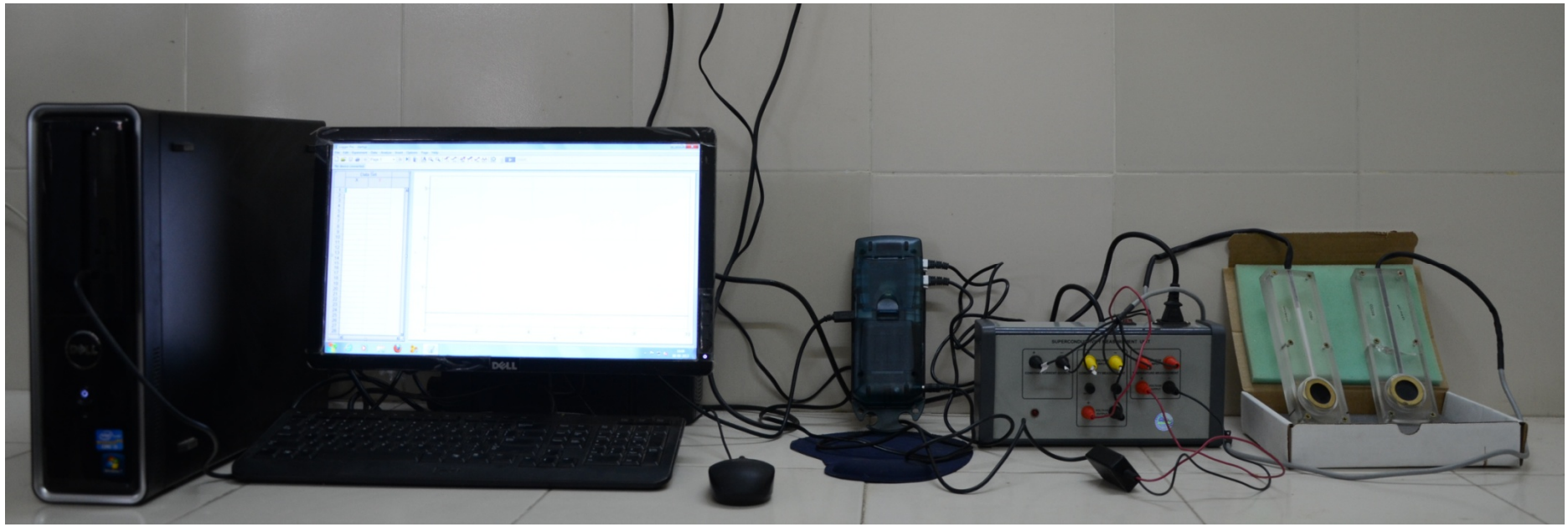
Sample required as per standard identification of the sample specified.

10. Transition Temperature measurement Setup for Superconducting Sample – Indosaw, INDIA **Price : 2,61,000/- INR**

Measurement of transition temperature for superconducting sample can be measured using this experimental setup. In this setup a probe chamber is used for liquid nitrogen in which superconductivity probe (with sample) is cooled up to 77 K (-196 ^{0} C). The superconductivity probe is designed precisely based on four probe measurement for resistivity. A temperature sensor is attached on the surface of the sample. The voltage drop across the sample is measured as a function of sample temperature using the **Vernier voltage sensor** and **LABPRO computer interface**.

Applications:

- ✓ Transition temperature measurements for a superconducting sample.
- ✓ Study of Meissner effect.
- ✓ Electrical resistivity measurements at low temperatures for other conducting samples (e.g. conducting glasses, conducting polymers etc.)



Sample requirements:

Sample in the form of pellet of diameter 20 mm and thickness 2 – 3 mm is required.

Shri Shivaji Science College, Amravati– 444 603 (M.S.) INDIA

CENTRAL INSTRUMENTATION CELL (C.I.C.)

Rates list for Measurement

Sr. No.	Facility	Type of Measurement	Charge in INR			
			College staff/Research Student/College Project/ Farmers	Affiliated Colleges to SGBAU	Other university	Industries
1.	Atomic Absorption Spectrophotometer (AAS)	Per element	50	60	122	240
2.	High Performance Liquid Chromatography (HPLC)	Per sample	300	360	448	960
3.	FT-IR Spectrophotometer (FTIR)	Per sample	150	180	336	720
4.	Ultraviolet and Visible Absorption Spectrophotometer (UV-VIS)	Per sample	100	120	168	360
5.	Polymerase Chain Reaction (PCR)	Per sample	150	180	280	600
6.	Gel Documentation	Per sample per snap	50	60	60	120
7.	Trinocular Axio Lab.A1 Fluorescence Microscope with Digital Camera	Per sample per snap	10	15	20	30
8.	Trinocular Stemi 2000 Stereo Zoom Microscope with Digital Camera	Per sample per snap	10	15	20	30
9.	Trinocular Phase Contrast Microscope with Digital Camera	Per sample per snap	10	15	20	30
10.	Transition Temperature measurement Setup for Superconducting Sample	Per sample	350	420	560	1200

*Additional charges will be levied subject to:

1. Measurement at Low/High/Variable temperatures whenever facilities exist
2. Samples requiring special processing prior to measurement
3. Quantitative measurement in optical region which require standardization.
4. Rs. 100/- for results on CD or Pen-drive wherever possible.
5. Rs. 50/- for transmitting the results through internet/e-mail transmission.

Shri Shivaji Science College, Amravati– 444 603 (M.S.) INDIA

CENTRAL INSTRUMENTATION CELL (C.I.C.)

Requisition for Sample/Slide Analysis

NAME OF USER : ……..

DESIGNATION : ……..

NAME OF INSTITUTION : ……..

ADDRESS : ……..

CONTACT No. : …….. **e-MAIL ID** : ……

NAME OF SAMPLE : …….. **No. OF SAMPLE(S)** : ……

SAMPLE DATE AND TIME : …….. **TYPE OF ANALYSIS** : ……..

SAMPLE HAZARDS : Antineoplastic …….. Carcinogen …….. Cytotoxic …….. Other (Please specify) ……

PAYMENT DETAILS **CASH:** **DD No:** **DD BANK:** **DATE OF ISSUE:**

Signature of user with Name and Date **Signature of Supervisor/Guide** **Signature of Head of Organization with seal**

÷ ÷ ÷ ÷ OFFICE USE ONLY ÷ ÷ ÷ ÷

Signature of Prof In-charge (C.I.C.)
Head, Department of Environmental Science

Cash Counter

Bill Number –
Bill Date –

PROCEDURE FOR USING THE FACILITY:

Requisition forms for availing any facility at the Centre can be obtained by writing to the Professor In-charge, C.I.C., Shri Shivaji Science College, Amravati – 444 603. The prevailing charges for measurements will be sent along with the request form. Copies of requisition forms duly filled could be sent with the samples or handed over personally at C.I.C. office. [Please clearly mention to whom the charges are to be billed]. After completion of the work, the user will be sent with the bill for the measurements along with the results.

The payment should be made by a crossed demand draft in favour of the **Principal, Shri Shivaji Science College, Amravati – 444 603** but should be mailed to the Professor In-charge, C.I.C., Shri Shivaji Science College, Amravati. An official receipt will be sent against payment. For effective utilization of the facilities, the users are requested to observe the following norms:

1. Submit samples in air tight vials.
2. Please do not send more than 5 samples at a time for any measurement. Arrange your samples in batches so that other users will also have a chance.
3. Be specific with respect to the nature of measurements to be made indicating solvents, temperature range and other details if any.
4. Mention clearly the details of the sample (ingredients, presences of halogen, nitrates, amino group, hydrazine, solvents used for preparation etc).
5. For measurements in-person, inform us well in advance and start the trip after getting written appointment.
6. Complaints regarding the measurements should be brought to the notice of Professor In-charge, C.I.C. immediately after the receipt so that corrective measures can be taken.
7. Inform us about the delay in measurements when it exceeds one month unless we confirm your schedule.
8. Acknowledge the services rendered by C.I.C. in all your publications and thesis to expose the facilities to the other users.
9. Send us a copy of your reprints (involving measurements done at the C.I.C.) and such documents like thesis (only acknowledgement section), reports etc with your remarks, for reference to other users and our record for rendering better services in future.
10. Write to us about your requirements of a new facility, which will have sufficient utility for workers and researchers in this region.

CONSULTANCY:

Any special help other than routine measurements will be treated only as consultancy service.

For more information please contact:

Prof In-charge, Central Instrumentation Cell (C.I.C.),

Shri Shivaji Science College, Amravati – 444 603 (M.S.) - INDIA

Tel.: 0721 – 2665485, Fax: 0721 - 2660855

E-mail:cicshivajisciamt@gmail.com

Shri Shivaji Science College, Amravati– 444 603 (M.S.) INDIA
CENTRAL INSTRUMENTATION CELL (C.I.C.)

PAYMENT RECEIPT

Receipt Number : …… **Billing Date** : ……

Received from : ……..

Institutional Address : ……..

Payment Details

Sample processed for : ……

Number of Sample : ……..

Total Amount : …… **(In figure)** …… **(In words)**

Authority Signature : …….