

### Activity-3

## **Five Day Training Course on “Instrumental Techniques and their Practical Applications for Students”**

### **2. Objective**

- Hands on training regarding some latest instruments like HPLC, Gas Chromatography, IR, FTIR, UV- VIS , X ray diffractometer used in laboratories.
- This course proved to be very useful for students to get employment in various industries and Chemical laboratories and also to start their own enterprise.
- This certificate course definitely enhanced the student’s skill in instrumental techniques in chemistry
- To establish Shri Shivaji Science College, Amravati as a front runner in research and a knowledge hub across specialties with other laboratories, facilities.
- to attract talent for research and to retain and provide encouragement to the in house talent
- To establish linkages with industry and Institutes of National importance and Create infinite opportunities for the students and teachers in their pursuit of knowledge/ quest for the unknown

### **3. Context**

In this context

- Centre for instrumentation cell (CIC) Centre has been developed in the college

- Nanotechnology Research Laboratory for research in material science is being developed

#### **4. The Practice**

In actual practice providing the information regarding following good operating practices

- Isocratic HPLC, Gradient HPLC, Chromatographic conditions, Industries work based on Chemistry.
- Reverse phase HPLC, Normal Phase HPLC,
- In Instrumental training of HPLC Mr. Amol Gawande provided
- Training regarding Column (stationary phase) and liquid (mobile phase).
- How to inject dissolved sample into the flow path of the mobile phase.
- How to detect analytes bands, to quantitate peaks generated.
- .All these points were covered by providing individual sample to each participants and performing their hands on training.
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#### **5. Evidence of Success**

Success of the practice can also be measured on following criteria

- 1. Participants had carried out the practical training of samples for this instrumentation. In the final session examination was conducted on this Instrumentation Course.**
- 2. UV-Visible practical performance of various samples.**
- 3. XRD Practical demonstration and performance of Practical training to each participant.**

4. Examination of thirty questions conducted on this practical instrumentation. All the participants got Grade A, B, C on the basis of mark scored in the examination. (A grade = more than 85%, B grade = more than 75%, C grade = more than 60%)
5. Increased participation of students in research competitions like 'Avishkar'
6. Increased participation of teachers in Conferences and Seminars
7. Many of the participants were placed in pharmaceutical industries, passed NET, GATE examination and perusing the research.

#### **1. Problem encountered**

- Theoretical based instrumentation practical's must be included in the syllabus.