



# CSIR-Central Electronics Engineering Research Institute (CSIR-CEERI)

## Hands-on training on Analytical Instruments







**COURSE  
HIGHLIGHT**

## **DAY 1**

### **LASER RAMAN SPECTROSCOPY**

**PRINCIPLE OF LASER RAMAN SPECTROSCOPY.  
SAMPLE PREPARATION & TESTING AS PER STANDARD.  
QUALITATIVE ANALYSIS USING LASER RAMAN  
SPECTROSCOPY.**

## **DAY 2**

### **NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY**

**PRINCIPLE OF NMR SPECTROSCOPY.  
SAMPLE PREPARATION USING NMR SOLVENTS.  
TESTING OF OIL SAMPLES USING NMR SPECTROSCOPY.**

## **DAY 3**

### **UV-VIS, FT-IR & NIR SPECTROPHOTOMETER**

**PRINCIPLES OF UV-VIS, FT-IR & NIR.  
SAMPLE PREPARATION USING CYCLONE GRINDER.  
TESTING OF SOLID (GRAINS) & LIQUID ANALYSIS  
USING FT-IR.**

## **DAY 4**

### **NMR-BASED QUANTITATIVE ANALYSIS**

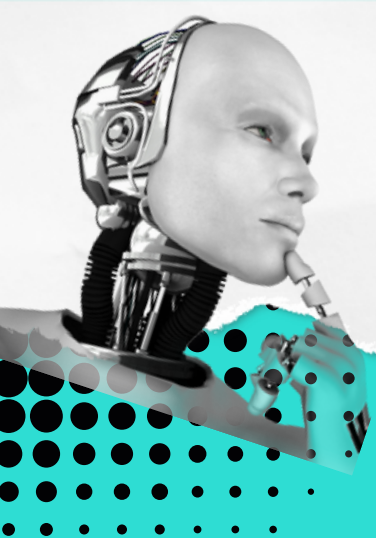
**PRINCIPLES AND WORKING OF FAT ANALYZER.  
SAMPLE PREPARATION USING MICROWAVE TECHNIQUE.  
CALIBRATION OF DEVICES USING STANDARD SAMPLES.**

## **DAY 5**

### **QUALITATIVE ANALYSIS**

**DATA PREPROCESSING.  
HANDS-ON IMPLEMENTATION OF CHEMOMETRIC  
TECHNIQUES.**

## **SPECIAL SESSIONS ON DATA ANALYSIS**



## WHO CAN PARTICIPATE

ANALYTICAL TRAINING IS DESIGNED FOR A WIDE RANGE OF INDIVIDUALS, DEPENDING ON THE CONTEXT AND PURPOSE OF THE TRAINING. HERE ARE SEVERAL GROUPS OF PEOPLE WHO CAN BENEFIT FROM ANALYTICAL TRAINING

**STUDENTS AND RESEARCHERS**

**TECHNICIANS AND OPERATORS**

**LABORATORY TECHNICIANS AND SCIENTISTS**

**ENVIRONMENTAL SCIENTISTS**

**BIOLOGISTS AND BIOCHEMISTS**

**PHARMACEUTICAL RESEARCHERS**

**CHEMISTS AND CHEMICAL ENGINEERS**

**QUALITY CONTROL AND ASSURANCE PERSONNEL**

**FOOD AND BEVERAGE INDUSTRY PERSONNEL**

**REGULATORY AFFAIRS PROFESSIONALS**

**FACULTY MEMBERS**

**START-UP PERSONNEL**

## GENERAL INFORMATION

### TRAINING FEE

**₹5000 + 18 % GST** for Student and Researchers

**₹7500 + 18 % GST** for Others

Per participant (including registration kit, working lunch, & session tea).

participation certificate will be issued upon the completion of the training.

limited seats; 10 per batch

Accommodation will not be provided

Training timing: 10:00 AM to 05:00 PM ( One week course)

Venue: CSIR- CEERI Jaipur Campus, Malviya Nagar, Jaipur

**To register scan or tap the QR code**



CONFIRMATION OF TRAINING DATES  
WILL BE INTIMATED THROUGH MAIL  
AFTER THE REGISTRATION

**Training fees to be deposited in**

ACCOUNT NAME: DIRECTOR, CSIR-CEERI, PILANI  
ACCOUNT NO: 61033385318  
IFSC: SBIN0031398  
BANK : SBI, CEERI CAMPUS

for any query  
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