

Greetings from CMTI,

We are pleased to inform you that we are conducting a 02 day Non-Residential Training programme on "**Optical Emission Spectrometry**", course code **0950**

### Highlights / Overview of the Program:

OES is a useful instrument in arriving at chemical composition of metals and alloys. The advanced equipment is computerised and result can be obtained in few seconds. Though the analysis process is advanced and involves less human involvement, there are many factors that affect the test result in terms of accuracy and measurement uncertainty. This course covers the following topics:

- Brief of various spectrometric techniques (ICP,AAS, OES, FTIR)
- Theory and principle of OES (Vacuum, inert gas filled optics)
- Factors that affect accuracy and repeatability of result
- Measurement uncertainty concept and estimation of measurement uncertainty
- Reference standards (SUS, RM, CRM). Preparation of secondary standard.
- Calibration of spectrometer - Standardisation (element, type, full standardization & Optical alignment (Profiling)
- Linearity of spectrometer
- Practical demonstration of analysis of alloys using Lab model and portable OES

### Target Participants:

Chemists employed in the laboratory, quality control supervisors and quality control inspectors who carry out vendor evaluation.

### Programme Schedule

It is 02 day Non Residential Training Programme scheduled during **19<sup>th</sup> – 20<sup>th</sup> June 2024**. The Programme will be held at Central Manufacturing Technology Institute, Bangalore

### Participation Fees

**Rs. 7,800/- plus GST @ 18%\*\*\*, per participant. This includes Course Kit, working veg lunch, midsession tea.**

Course Fee can be paid through **NEFT / RTGS / Demand Draft**. Demand Draft to be drawn in favor of "Central Manufacturing Technology Institute", payable at Bangalore and should reach CMTI one week before the actual date of commencement of the course.

### Beneficiary for RTGS/NEFT

- a) **Name : Central Manufacturing Technology Institute**
- b) **GST No: 29AAATC2085K1ZJ**
- c) **Account No :10521862015**
- d) **Bank Name & Branch: State Bank of India, Yeshwanthpur Branch**
- e) **IFSC Code :SBIN0003297**
- f) **MICR Code : 560002055**

### Additional Information:

1. A 10% rebate on course fee will be given to organizations nominating 3 or more participants for each programme, only if payment is made in advance, ten days before the commencement of the course.
2. Individuals/ Companies interested in participation are requested to fill in the enclosed Enrollment Form and submit at the earliest.
3. Participants are advised to proceed for the programme only after the nominations / Programme confirmed by us (by Fax / Letter / Phone / E-Mail).
4. Participants should report at CMTI on the day of commencement of the course. Participants are advised to reach Bangalore the previous day evening/ night.
5. Course will be conducted from 09:00 to 17:00 hrs. Participants may plan their return journey accordingly.
6. Participants will be given Certificate after the completion of the Training Programme
7. Enclosed are the tentative programme contents for ready reference
8. GST No. to be shared while sending your nomination / Registration (If a company is exempted from GST they have to provide GST Exemption certificate).
9. Please note that Course fee once paid will not be refunded. However, change in nomination will be permitted.

**Note: \*\*\* Taxes and other levies will be charged as per the prevailing rates at the time of Billing**

For further enquiries / registration / nominations, please contact:

**Mrs. Asha R Upadhyaya, Joint Director & Centre Head – AEAMT,**

09449842686 / 78 Fax: (080) 2337 0428

E-mail– training@cmti.res.in

# CENTRAL MANUFACTURING TECHNOLOGY INSTITUTE

Tumkur Road, Bangalore 560 022

**Training Programme**  
On  
**"Optical Emission Spectrometry"**

Tentative Programme Schedule

Day	Topic
Day 01	Need for testing and Brief of various spectrometric techniques (ICP, AAS, OES, FTIR, XRD etc.)
	Classification of alloys & role of individual elements in an alloy
	Theory and principle of OES (Vacuum, inert gas filled optics, CCD/PMT based spectrometers)
	Calibration of optical emission spectrometer (SUS, RMs, CRMs, Optical alignment, Standardisation, Sample preparation)
	Standard Test Methods (IS, BS, JIS, ASTM) and Lab developed method & its validation
Day 02	Factors that influence accuracy and repeatability of measurement. Measurement uncertainty concepts and estimation UOM for OES
	Lab visit and demonstration of calibration and testing
	Lab visit and demonstration contd...
	Evaluation and Interactive session/discussion
	Concluding Session