Manufacturing Technology Training
An IMTMA initiative

Advanced Heat Treatment Processes in Metal Working
Date : 14 to 15 October, 2025
Time : 1340 Hrs to 1700 Hrs (Online Mode)

INTRODUCTION

The demand for a superior product at a lower cost is an ever growing demand. Engineers and scientists in organizations constantly researching to achieve this objective. About 70-80 percent of the components of industrial products, whether they are automotive or non-Automotive products are manufactured out of various types of steel due to its favourable cost to strength ratio. Steel properties can be changed to meet the manufacturing process standard to meet the design requirement by suitable heat treatment processes. Therefore in-depth knowledge of different Industrial heat treating processes is essential to find solutions to the problems quickly and effectively.

Keeping this in view, Indian Machine Tool Manufacturers' Association (IMTMA) is organising a training programme on **“Advanced Heat Treatment Processes in Metal Working”.**

FOCUS AREAS

- Review of Basic heat treatment principles
- Iron Carbon diagram, TTT diagrams, effect of alloying elements
- Various quenching media, its properties with respect to Heat treatment
- Hardenability concept, calculation, effect of alloying element etc.
- Different Advanced heat treatment processes, Principles, Equipment and their applications
    - Isothermal annealing
    - Vacuum heat treatment processes
    - Induction hardening, coil design, coil failure with examples
    - Vacuum carburizing
    - Carbo Nitriding and Nitro Carburizing
    - Laser hardening
    - Electro beam hardening
- Industry case studies in each process
- Heat treatment furnaces
- Defects in heat treating and remedies
- Distortion and cracking control
- Heat treatment simulation using CAE approach

KEY TAKE AWAYS

After undergoing the programme, the participants will be able to learn about.

- Heat Treatment principles and practices.
- Importance of various quenching media, its properties with respect to Heat treatment
- Hardenability concept, calculation, effect of alloying element etc.
- Different Advanced heat treatment processes, Principles, Equipment and their applications
- Defects in heat treating and remedies, Distortion and cracking control.
- Heat treatment simulation

FEE PER PARTICIPANT (PER LOGIN)

Rs. 7500/-
+18% GST
IMTMA Members/ Micro Companies/ Individuals/ Educational Institutions / Students/ IMTMA Non Members/ Others

USD 300/-
Overseas Participants

Group Concession : 10% for 3 to 5 and 30% for 6 and more delegates being nominated from the same company

FACULTY

This Program will be conducted by **Mr. Ganapathi K N.**

Mr. Ganapathi K. N. is currently associated with IMTMA as a faculty member, following his retirement from his full-time role at the organisation. He brings with him over 32 years of rich experience, including 16 years in the industry and 16 years in academics and training.

A postgraduate in Metal Casting Science and Engineering from UVCE, Bengaluru, Mr. Ganapathi has held various positions in both ferrous and non-ferrous foundries prior to joining IMTMA. He possesses in-depth knowledge of foundry operations and has successfully provided practical solutions to a wide range of foundry-related challenges.

During his career, he has delivered specialized training programs in the metal casting domain to more than 300 engineers from various manufacturing organizations across India. In addition, he has also taught metal casting topics to postgraduate engineering students, contributing significantly to industry-oriented technical education.

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REGISTRATION : Prior registration with an online advance payment is must. Number of participants is limited and will be accepted on ‘First Come First Serve’ basis. A Certificate of participation will be issued to participants.