Manufacturing Technology Training
An IMTMA initiative

Online Training on Advanced Heat Treatment
Date : 3 to 4 November, 2020
Time : 1400 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, be it automotive or Engineering are manufactured out of various types of steel due to its favourable cost to strength ratio. Steel properties can be changed to meet the design requirement by suitable heat treatment process. Therefore in-depth knowledge of different Industrial heat treating processes is essential to find solutions to the problems quickly and effectively. Several basic heat treatment processes are in use for centuries and also many advanced heat treatment processes are developed and in practice in industries to enhance the properties.

Keeping this in view, Indian Machine Tool Manufacturers' Association (IMTMA) is organising an online training program on "**Advanced heat treatment processes"**.

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.

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

FEE PER PARTICIPANT (PER LOGIN)

Rs. 4000/-
+18% GST
IMTMA Members/ Micro Companies/ Individuals/ Educational Institutions / Students/ IMTMA Non Members/ Others

FACULTY

This programme will be conducted by **Mr Ganapathi K N** and **Mr. S.C .Balawat**

Ganapathi K N, Adviser at IMTMA, has over 16 years of industrial experience and over 15 years of academic and training experience. He is a Mechanical engineer with Post graduation in metal casting science and engineering. He has thorough knowledge of Materials, Metallurgy, Metal casting and heat treatment processes. He has carried out many specialised programmes on metal casting technologies, Metallurgy and heat treatment for industries. He has also taught these topics to post graduate engineering students.

S.C .Balawat is a Metallurgical Engineering graduate. He has over 40 years of active Industrial Experience in Metallurgy and manufacturing. He has more than 40 years of Industrial experience worked in Motor industries Co. Bangalore, Automotive Axles Limited Mysore and John Fowler India Limited, Bangalore. Post retirement, he is consulting in Manufacturing and Metallurgy for Forging and Foundry industries.

For Registration Contact

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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.