



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”**

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 presently working as Director Training at IMTMA, having 16 years of industrial and 16 years of academic experience. He is a mechanical engineer with post graduate in metal casting science and engineering. Prior to IMTMA, Ganapathi has worked at various capacity in manufacturing companies. 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. At IMTMA his role is to develop and introduce new programmes for enhancing competitiveness of Industries.

For Registration Contact

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