Manufacturing Technology Training
An IMTMA initiative

Advancements in Heat Treatment Processes
Date : 22 to 23 March, 2022
Time : 1310 Hrs to 1730 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.

Simulation of heat treatment is primarily about the prediction of the material properties that can be achieved by heat treatment. Predictions of distortions caused by the heat treatment can also be of interest. **Simulating the process reduces the amount of experimentation required during process design and process optimization. Knowledge of Heat treatment simulation helps to optimize the process and reduce cost.**

Keeping this in view, Indian Machine Tool Manufacturers' Association (IMTMA) is organising 2 day online programme on "Advancements in Heat Treatment Processes"

FOCUS AREAS

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

KEY TAKE AWAYS

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

- Heat Treatment principles and practices.
- Importance of various quenching media, its properties with respect to Heat treatment
- Hardenability concept, calculation, the 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. 5500/-
+18% GST
IMTMA Members/ Micro Companies/ Individuals/ Educational Institutions / Students/ IMTMA Non Members/ Others

USD 220/-
Overseas Participants

Group Concession : 20% 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 and Mr. S.C. Balawat.**

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.

Mr. S.C. Balawat, a Metallurgical Engineering graduate from Karnataka Regional College, Surathkal (Now it is NITK Surathkal). He is gold medalist. He has over 40 years of active Industrial Experience in Metallurgy and manufacturing. He has worked in Motor industries Co. Bangalore (now BOSCH) manufacturers of Fuel Injection Pumps and Sparking plugs for 10 years, and for 17 years in Automotive Axles Limited Mysore, manufacturers of Rear Axles for LCV and HCVs. In addition, he has worked for 13 years in John Fowler India Limited, Bangalore, a firm specializing in post-harvest Agricultural machinery and primary Tobacco processing machineries. Post retirement in 2012 he is consulting in Manufacturing and Metallurgy for Forging and Foundry industries. He has been associated with IMTMA as faculty for Design Institute in the subject of Heat treatment and metallurgy.

Mr. S.C .Balawat is a member of The Institute of Engineers (India) as well as the member of Indian Institute of Foundry. He is Council member of Shivamogga Chapter of IIF and a committee member of the Institution of Engineers (India), Mysore Local Centre.

For Registration Contact
Nishant Singh
Programme Coordinator
9823174010
nishant@imtma.in

Contact Address
INDIAN MACHINE TOOL MANUFACTURERS' ASSOCIATION
Plot 249F, Phase IV, Udyog vihar,Sector - 18,
Gurgaon - 122015
Tata no- +91-124-6463101
Tel : 0124 4014101 - 04
Fax : +91-124-4014108

imtmatrainning.67038796@hdfcbank

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.