Manufacturing Technology Training
An IMTMA initiative

Zero Defects in Welding Applications
Date : 21 May, 2026
Venue : IMTMA Technology Centre, Pune

INTRODUCTION

Today, Welding has acquired the status of a top class manufacturing process and is required by almost every sector of Industrial activity, everywhere in world. Means of transport - be it road, rail, air or water – all of them necessarily depend on welding technology for their manufacturing. The same goes for the consumer durable & white goods industry. The quality needs of various welded sheet metal and other components are vital for the producers to reach the A-class level of competence and consistency of the integrated final product.

The modern fast and automated manufacturing Technology required in these Mass-manufacturing industries, involves Welding processes such as Resistance Spot, Seam, Projection and Butt Welding, MIG/MAG Welding, FCAW, Laser Cutting & Welding, Friction Welding and Friction Stir Welding. **In spite of the high end technology the quality inconsistency arising due to distortion and welding defects are still the major issues every welding Engineer faces**.

This will help the practicing engineers in developing full technical understanding of the subject and solve manufacturing issues related to welding processes.

FOCUS AREAS



- A perspective on what is Zero Defects in Welding – Man. Machine, Method
- Taking into account the needs of the materials for generic process of welding - the Science of Welding
- Important Material Properties which directly interact with these Processes - they dictate the process
- Overview of Welding Technology to logically comprehend given processes
- Welding Arc as a Heating Source – know the Physics for correct application
- Evolution of various Arc Welding Processes
- Snap shot of various Arc Processes – SMAW, SAW, ESW, GTA, PLASMA
- MIG/MAG_CO2 Process : Equipment, Power Sources, Controls, Productivity
- Fitment issues in MIG / MAG, Defects, and Distortion in Arc Welding
- The six Resistance Welding Processes : Commonalities & Basics
- Resistance Spot, Seam and Sheet Projection Welding Process
- Solid Projection, Upset Butt and Flash Butt Welding Processes
- Friction and Friction Stir Welding
- Laser Processing : Cutting, Heat Treating and Welding
- Electron Beam, Ultrasonic, CD Stud and Arc Stud processes
- Other solid state welding processes
- Safety, Maintenance, Productivity in Welding

KEY TAKE AWAYS

After undergoing the programme, the participants will be able to -

- Clearly understand the mechanism of weld formation - the basic for all the welding done - to be able tocorrelate the dynamics of the various processes;
- Convincingly choose the welding process for given applications on relative merits;
- Develop the ability to analyze and solve the day to day problems more effectively and quickly;
- Plan for the consistency of the quality levels while meeting the production targets by understanding theinteractive effect seven(7) engineering disciplines in action at a time;
- Plan and run their DoE trials, as and when needed, more effectively and economically by choosing the rightparameters – the attributes;
- Finally understand and grasp the whole picture – a common platform - to preempt and avoid the time consuminginterdepartmental meetings for problem solving and/or conflict resolution.

PARTICIPATION FEE

Rs. 2999/-
+18% GST
IMTMA Members/ Micro Companies/ Individuals/ Educational Institutions / Students/ IMTMA Non Members/ Others

USD 120/-
Overseas Participants

Group Concession : 10% for 3 to 5 and 20% for 6 and more delegates being nominated from the same company

PARTICIPANT PROFILE

This programme will benefit Managers, Engineers, Designers and Middle Management personnel involved in the functions of Design & Development, Manufacturing, Quality assurance and other related functions from Auto & auto ancillaries, White Goods and consumer durable manufacturing, General Engineering, Defence and Railway establishments, etc. by way of getting the analytical insight of these welding processes for better control.

FACULTY

This programme will be conducted by **Mr. Vijay S. Agwan**

Mr. Vijay S. Agwan is an industry expert with over 40 years of experience in the field of welding activities related to research, development, equipment manufacturing. quality control , contract manufacturing and training. With M.Tech - Prod degree & IWE (ISO:14731) Diploma, he is a qualified Welding Professional and a free-lance consultant for in-house group companies and many industries in Auto sector for training and problem solving. He has also given his services as a Regional Director (West) to Indian Institute of Welding-ANB for promoting the Welding Education among users , and ISO Certification of Individuals and Industries.

The programme will be highly interactive where participants can solicit guidance on specific technical issues from the expert faculty.

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REGISTRATION : Prior registration for participation is necessary. Number of participants is limited and will be accepted on 'First Come First Serve' basis. A Certificate of participation will be issued to participants.
Important Information : Participation fee includes, course material, working lunch and tea / coffee. Interested companies are requested to register online by clicking on 'REGISTER' button and by filling up the nomination authority and participant's details in specified form.