



COURSE FEES

The fees are reasonably priced & are highly subsidized at Rs. 2,950/- (Incl. of GST) for MFAI members and Rs. 6,490/- for non-members. Participants from Govt. & R + D Organisations will be charged Rs.2,950/- (Incl. of GST) only.

Course fee includes : The delegate kit with course material, lunches, tea, refreshments and industrial visits.

DATES & TIMINGS

10th to 15th July 2023

Timing : 10 am to 5 pm | Lunch : 1 pm to 1.45 pm

Tea / Coffee breaks between Lecture Sessions.

ACCOMODATION

Reasonably priced accommodation in nearby hotels for outstation participants can be recommended, provided written confirmation is made by 15th June 2023, Accommodation charges will be notified on request. The hotel charges have to be paid in advance.

REGISTRATION

Please send the registration form duly filled to the MFAI office along with a Cheque / D.D. payable at Mumbai, in favour of Metal Finishers' Association of India. As the course is limited to 30 participants only, seats will be allotted on First come first serve basis. We would appreciate if the Registration is confirmed preferably latest by 15th June 2023. The registration, confirmation & any other clarification can also be done by phone (Mr. Babu-98924 96942 / 022-49240693).

Bank Details :

A/c Name : Metal Finishers' Association of India
Bank Name : Canara Bank
Address of Bank : Plot No. 3 & 4, Samant Estate, Goregaon (East), Mumbai - 400 064.
Bank A/C No. : 50172010011451
Account Type : Saving
IFSC Code : CNRB0015017
MICR Code : 400015208

DISCLAIMER / NOTE

Safety of the participant during the certificate course or outdoor visit is the sole responsibility of the participant and MFAI is not responsible for any untoward accident.

28th Certificate Course in Electroplating & Metal Finishing

A comprehensive course designed specially for the benefits of those who wish to enter the profession as entrepreneurs or want to improve METAL FINISHING SKILLS in their existing plants

10th to 15th July 2023



Metal Finishers' Association of India
Society Regn No. : MAH/Bom/259/74 - G.B.B.S. Dt. 13.9.1974
Charity Commissioner Greater Bombay Region
Maharashtra State No. F/3465 Bombay Dt. 11-12-1974

203, Atlanta Estate, Vitbhatti, Goregaon - Mulund Link Road,
Goregaon (East), Mumbai - 400 063.
Tel : Mr. Babu 022-49240693 / 98924 96942.
E-mail : mfai@gmail.com | Web : www.mfai.org

COURSE OBJECTIVES

To impart technical skills for productivity, quality control, cost control and trouble shooting as well as effective supervision of the shop-floor. The course content has been devised by experts keeping in view the requirements of Electroplating and Metal Finishing Industry. The lectures will be delivered by well known experts and consultants in the field and will be fully practice oriented. This course aims at giving extensive coverage to all aspects of SURFACE FINISHING.

COURSE CONTENT

Basic Electrochemistry: pH, Faraday's Laws, Electrode, Potentials, EMF Series, Current Density, Current and Energy Efficiencies and Significance of Throwing Power.

Mass Finishing : Abrasive Blasting, Shot Peening, Buffing and Mechanical Polishing.

Pre-Treatment and Cleaning : Principles and Applications of Solvent Cleaning, Soak and Electrocleaning Ultrasonic Cleaning, Acid Pickling, Alkaline de-rusting.

Zinc and Cadmium Plating : Cyanide Processes, Acid Zinc Processes, Alkaline (cyanide free) Processes, Chromate Passivation (tri-valent and hexa -valent chromium). Zn-Co, Zn-Ni and Zn-Fe alloy coatings.

Copper Plating : Cyanide Process, Acid Copper, Fluoborate and Pyrophosphate Baths, Alkaline non-cyanide Process, Specifications of Electrodeposits.

Nickel Plating : Watts and Sulphamate Baths, Chemistry of Processes such as Dull - Nickel, Bright Nickel, Duplex Nickel and Satin Nickel, Quality parameters for testing Nickel electrodeposits, Nickel stripping.

Chrome Plating : Hard Chrome, Bright Chrome, High Speed Chrome, Chrome from trivalent baths, self regulating baths (SRHS), low-etch baths, Specifications for testing electrodeposits.

Tin Plating : Alkaline and Acid Processes, Fluoborate Baths, Tin/Lead Alloy Plating, Tin/ Lead stripping -High speed Tin Plating

Silver Plating : Different Plating Baths, Anti-tarnish treatment. New Developments.

Gold Plating : All types of Gold Plating Baths (acidic, neutral and cyanide) Hardening & Brightening of Gold/ Gold alloy coatings.

Electroless Nickel Plating : Low, Medium and High Ni-P coatings, Explanation of Chemistry involving reducing agents such as Hypophosphites and Boron compounds.

Other Electroless Plating Processes : Process flow charts and chemistry of deposition of nickel alloys, copper, gold and other metals.

Electrodeposited Composite Coatings : Ni-Al₂O₃, Ni-Teflon, Ni-Diamond etc. (Mechanism & experimental)

Pulse Plating and Current Reversal Techniques.

Plating on Aluminum and other difficult to plate substrates.

Cleaner Plating Technologies: Newer Baths.

Anodising : Introduction to Anodising, Grades of Aluminum and their influence on process condition, Dyeing & Testing of Anodised films, **Hard Anodising.**

Phosphating and Blackodising : Chemistry of Phosphating, Iron, Zinc, Manganese and tri-cation phosphate coatings, hot and cold blackening processes for steel and its alloys. The concept of Nano-technology pretreatment.

Aluminum Pretreatment (Chrome and Chrome free)

Painting and Powder Coating.

Electrophoretic Lacquering and Electropainting (Gold & other Metallic colours)

Effluent Treatment: Treatment of cyanides & hexavalent chrome. Removal of heavy metals. Low cost methods & the concept of common Effluent Treatment plant (CETP). Plant & Equipment. The concept of zero discharge & cleaner technologies.

Testing and Quality Control : NSS test, Humidity test, Copper Accelerated Acetic Acid (CASS) TEST, Thickness testing, Adhesion, Wear testing.

The Role of HULL CELL in Electroplating (Practical Demonstration)

Equipment for Metal Finishing : Filters, Polishing barrels, Rectifiers, Heaters/ Coolers, Plating Barrels, Vats, Anode Baskets, Auxiliary anodes and jigs, Centrifuges.

Alternate Coating Techniques : PVD, CVD, Thermal Spraying and Mechanical Plating.

Safety Measures in Metal Finishing Industry.

Management : Management Principles and their application to plating shops.

The participants will also be taken for an industrial visit to get maximum first hand experience of production & plant management.

In addition, an OPEN FORUM of one hour duration will be devoted to providing solutions to shop floor problems and other related topics by a **panel of experts.**

All participants will be awarded certificates after completion of the course. This certificate is recognized by the Supply Houses & Electroplating Shops & helps in getting suitable placements for the participants. On the basis of feedback, one deserving participant will be awarded a prize (GRAHAM'S Electroplating Engineering-Handbook). All lectures will be delivered at the conference hall of **MFAI** which is fully air-conditioned with good sealing & projection arrangement. **MFAI** has a well-stocked library with books on almost all topics of Electroplating & Metal Finishing.

PARTICIPANT : REGISTRATION FORM

Date : _____

The Course Convener,
Metal Finishers' Association of India,
203, Atlanta Estate, Vitbhatti,
Goregaon - Mulund Link Road,
Goregaon (E), Mumbai - 400 063.
Tel : 29277291/49240693

GST: 27AAATM0092J1ZK

Photo

**CONTACT: Mr. Jayesh Shah (Course Convener) 9820180724
Mr. Babu (10 am to 5 pm) Tel : 022-49240693 / 98924 96942.**

I wish to register as a participant for the 28th Certificate course on 'METAL FINISHING.'

I am / am not a member of MFAI (My membership number is _____) Enclosed find a cheque for Rs. _____

Cheque / D.D. No. _____ drawn on _____ (Bank's Name)

**ALL CHEQUES / D.D. SHOULD BE DRAWN IN FAVOUR OF
METAL FINISHERS' ASSOCIATION OF INDIA.
(Payable at Mumbai)**

**Please mention your Name, Mobile No. & Membership No.
behind the Cheque.**

Participant's Name: _____

Company / Organisation: _____

Postal Address: _____

STD Code Phone No.: _____

Mobile No.: _____

E-mail ID : _____

Members GST No.: _____

Signature (with rubber stamp of the company)
(Please use marker pen to fill the form & use capital letters wherever possible)

The Registration Fees are as follows :

Members of MFAI, Govt & R & D Org. Rs. 2,500/- + Rs. 450/- (18% GST) = Rs. 2,950/-

For others _____ Rs. 5,500/- + Rs. 990/- (18% GST) = Rs. 6,490/-