



1. Basic Principles Of Electroplating Science

- 1.1 Atoms, ions and the electron
- 1.2 Electricity – voltage and current
- 1.3 Chemistry – Acids and alkalis
- 1.4 Metallurgy and the galvanic series
- 1.5 Anodes, cathodes and electrolytes
- 1.6 Faradays law of electrolysis
- 1.7 Electrolysis electroplating metal deposition
- 1.8 Basic principles of corrosion and protection

2. Plating Technical Parameters

- 2.1 Surface area and cathode geometry
- 2.2 Cathode current density, current efficiency and throwing power
- 2.3 Electroless plating
- 2.4 Plating solution parameters
- 2.5 Solution chemistry and control
- 2.6 Coating testing
- 2.7 Types of surface functions

3. Processing & Plant Layout

- 3.1 Cathode presentation – Jigging, racking and wiring of parts
- 3.2 Pre-treatment and cleaning
- 3.3 Process sequence
- 3.4 Rinsing
- 3.5 Types of plant and layout
- 3.6 Maintenance

4. Effluent Treatment & Waste Management

- 4.1 Types of waste and effluent
- 4.2 Reduction, oxidation and neutralisation
- 4.3 Precipitation of metals
- 4.4 Effluent plant

5. Quality Systems

- 5.1 Specifications, Documentation & Traceability
- 5.2 Procedures and system instructions
- 5.3 Contract review – can you process the part?
- 5.4 Job cards and process control documents
- 5.5 Calibration and traceability
- 5.6 Quality control and statistical process control

