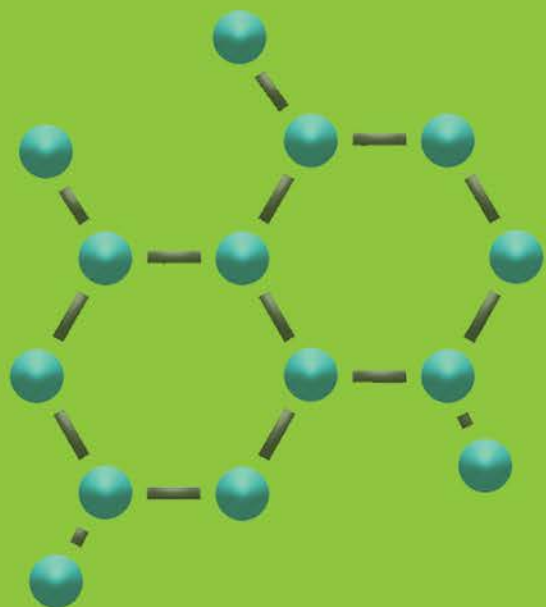


Course Content

Industrial Electroplating

FUNDAMENTALS & APPLICATIONS



Electrochemistry - Basics

LEARNING:

- Atoms & molecules
- Inorganic & organic chemistry
- Electrolysis, electrode potential, ionization, Faraday's Laws, Nernst Equation, and Tafel's Equation

VALUE:

- The module will cover the fundamentals of chemistry.
- It will simplify the most important and relevant electrochemical concepts of industrial electrolysis.

Electroplating - Concepts

LEARNING:

- Current efficiency, covering & throwing power
- 5 critical electroplating variables
- Ohm's Law and programmable logic controller (PLC)
- Cleaning, activation, water & wastewater treatment systems

VALUE:

- You will learn important electroplating mechanisms.
- Learn real life accessories required to master practical deposition and coating applications.

Analyses – Electrolyte & Deposit

LEARNING:

- Volumetric & Instrumental analyses
- Hull cell, spot tests & thickness measurement methods
- Microstructure and metallography
- Corrosion and tribology applications and testing

VALUE:

- This module will cover the highlights of several electrolytes and deposit testing techniques.

Applications – Electrolytic, Electroless & Immersion

LEARNING:

- Electroplating processes – Zn, Ni, Cr, Cu, & precious metals
- Conversion coatings and plating on Al
- Electroless processes – Ni-P & Ni-B

VALUE:

- This module builds on the previous learning and deals with the specifics of a process, formulation, control and maintenance.

Process Development & Control Methods

LEARNING:

- TQM, Lean, and Statistical Process Control
- Automation & innovative technology

VALUE:

- Planning, organizing, decision making and control are important for an organization to create a surplus. This module helps leverage the learning from other modules and maximize effectiveness.



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Precious Metals Plating			
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Strike Plating and Electromotive Series			

3-Day Schedule

	DAY 1	DAY 2	DAY 3
Session 1	Introduction Chapter 1	Chapter 7	Chapter 10
	✓ Break (~15min)	✓ Break (~15min)	✓ Break (~15min)
Session 2	Chapter 2	Chapter 8	Chapter 11
	✓ Lunch (~45min)	✓ Lunch (~45min)	✓ Lunch (~45min)
Session 3	Chapter 3 Chapter 4	Chapter 9	Chapter 11
	✓ Break (~15min)	✓ Break (~15min)	✓ Break (~15min)
Session 4	Chapter 5 Chapter 6	Chapter 9	Chapter 12 Chapter 13 Chapter 14 End