



MANUFACTURING AND PRODUCTION

Electroplating and Surface Finishing

3 day course

Classroom, online or in-house

Course overview

A plated coating is only as good as the surface underneath it, so most plating failures are cleaning failures that appear weeks later as blisters, peeling or rust through. This course starts with preparation. Delegates work through substrate cleaning: degreasing, alkaline cleaning, acid pickling and the water rinsing between stages that prevents drag over. Surface preparation for difficult substrates follows. Electrochemistry is covered in usable terms, including current density, throwing power and the distribution that leaves recesses thin. Plating processes are addressed for zinc, nickel, chromium, copper and tin, with the bath chemistry and control each needs. Bath analysis, additives and contamination are covered. Passivation and conversion coatings follow. Anodising is addressed for aluminium. Thickness measurement and adhesion testing are covered, alongside salt spray and its correlation with service life. Effluent treatment and metal recovery are addressed, since plating effluent is heavily regulated. The course closes on defect diagnosis and on rack and barrel selection.

What you will learn

- Clean and prepare substrates so a coating will adhere
- Prevent drag over through correct rinsing
- Apply current density and throwing power to get even coverage
- Control zinc, nickel, chromium, copper and tin baths
- Analyse baths and manage additives and contamination
- Apply passivation, conversion coatings and anodising
- Test thickness and adhesion, and treat plating effluent

Who should attend

- Electroplating operators and line supervisors
- Surface finishing chemists
- Quality staff testing coatings
- Environmental officers at plating shops
- Engineers specifying plated finishes

Course outline

- 01 Plating failures are cleaning failures
- 02 Degreasing, alkaline cleaning and pickling
- 03 Rinsing and drag over
- 04 Current density and throwing power
- 05 Zinc, nickel, chromium, copper and tin baths
- 06 Bath analysis, additives and contamination
- 07 Passivation, conversion coatings and anodising
- 08 Thickness, adhesion, salt spray and effluent treatment

Upcoming dates

Dates	Venue	Format	Fee per delegate
23 to 25 September 2026	Dar es Salaam, Tanzania	Classroom	USD 995
4 to 6 November 2026	Online	Online	R6,500
14 to 16 December 2026	Harare, Zimbabwe	Classroom	USD 995



Fees and how to register

This 3 day course is **R6,500** per delegate online, **R14,950** in the classroom in South Africa, Botswana, Namibia, Lesotho and Eswatini, and **USD 995** in the classroom elsewhere in Africa. In-house training is quotation on request. Book 2 or more delegates on this course and save 10%.

To register or request an in-house proposal, visit www.afrisciencegroup.com, email info@afiscience.co.za, or WhatsApp us on **+27 63 479 1136**.

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