



# Introduction to Aluminium Metallurgy

This 3 x 0.5-day training course contains the following modules:

## **Introduction to Aluminium**

- Aluminium production and usage
- Overview of alloy systems and applications
- Common manufacturing methods

## **Aluminium Microstructure & Metallurgy Fundamentals**

- Aluminium crystal structure, alloy systems and phase diagrams
- Casting and solidification microstructures
- Strengthening Mechanisms
- Microstructure evolution during processing

## **Thermal Treatments**

- Homogenisation and preheat
- Solution heat treatment
- Artificial ageing

## **Deformation and Annealing Mechanisms**

- Deformation and microstructure
- Recovery and recrystallisation
- Control of grain structure

## Aluminium Surface Control

- Surface generation
- Surface problems related to metallurgy
- Surface Analysis Techniques
- Cleaning and pre-treatment

## Testing & Materials Characterisation

- Chemical composition
- Mechanical properties and formability
- Microstructure: intermetallic particles, grain structure and texture
- Fractography and failure analysis

## Q&A Session

- Interactive session with Innoval's experts
- Wrap-up

## Sample agenda:

### Introduction to Aluminium Metallurgy Online Training Course

DAY 1: 0900-1230 / 1300-1630 (UK)	DAY 2: 0900-1230 / 1300-1630 (UK)	DAY 3: 0900-1230 / 1300-1630 (UK)
Welcome and brief introduction to Innoval Technology	Thermal Treatments 1 (Homogenisation)	Thermal Treatments 3 (Artificial Ageing)
Introduction to Aluminium	BREAK	BREAK
BREAK	Deformation & Annealing Mechanisms (+ workshop)	Aluminium Surface Control
Aluminium Microstructure and Metallurgy Fundamentals (1)	BREAK	BREAK
BREAK	Thermal Treatments 2 (Solution Heat Treatment)	Testing & Materials Characterisation
Aluminium Microstructure and Metallurgy Fundamentals (2)		BREAK
		Final Q&A and Wrap-up

For more information please contact:

**Helen Forrest**

Tel: +44 (0) 1295 702844

Mobile: +44 (0) 7793 632986

[helen.forrest@innovaltec.com](mailto:helen.forrest@innovaltec.com)