40 years of expertise in laser safety and laser technologies, serving your most critical challenges.

Applied Laser Metallurgy

Ref: CQ.2

The origin of a failure or defect during a laser operation often lies in changes to material properties during the laser treatment phase. Sound knowledge and good control of metallurgical phenomena help to detect the causes of potential defects and remedy them quickly, or even avoid them during the application phase.

Practical information

DATES (INTER-COMPANY / IN-HOUSE)
• 24–26 November 2026

ORGANISATION
IREPA LASER - Strasbourg / Illkirch

DURATION
3 days (21 hours)

PRICES
1990€ excl. VAT

TECHNICAL/TEACHING LEAD:
Franck RIGOLET

DO YOU HAVE A DISABILITY?
Contact our disability officer at referent.handicap@irepa-laser.com

Key information

PREREQUISITES
General technical knowledge

ACCESSIBLE LASER CLASSES
/

CERTIFICATION
Certificate of completion issued.

TECHNICAL/TEACHING LEAD:
Franck RIGOLET

Training objectives

- Understand rapid-cycle metallurgical phenomena.
- Know the mechanisms resulting from laser heating.
- Analyse and understand the specific defects that can result from the use of laser technology.
- Acquire the specific skills needed to properly control heat-induced defects.

Target audience

Engineers, welders, technicians.

Programme

Over 3 days

Review and fundamentals of metallurgy
• Commonly used metals
• Equilibrium diagrams
• Non-equilibrium transformations

Metallurgy and laser treatment
• Welding, cutting, heat treatment
• Metallurgical analyses
• Real-world case studies

Metals and alloys
• Basic notions of crystals
• Main crystal structures
• Solidification mechanisms

Technological aspects
• Identifying metallurgical defects
• Thermal aspects
• Characterising a thermally fused zone