

# Training

## Dolni Brezany

### Dates.

16-17 October, 2025

### Venue.

#### HiLASE Centre

Institute of Physics of the Czech Academy of Sciences, Za Radnici 828, 252 41 Dolni Brezany, Czech Republic



### Audience.

- University students and early stage researchers
- Engineers & professionals working in manufacturing and industrial applications.

### Registration.



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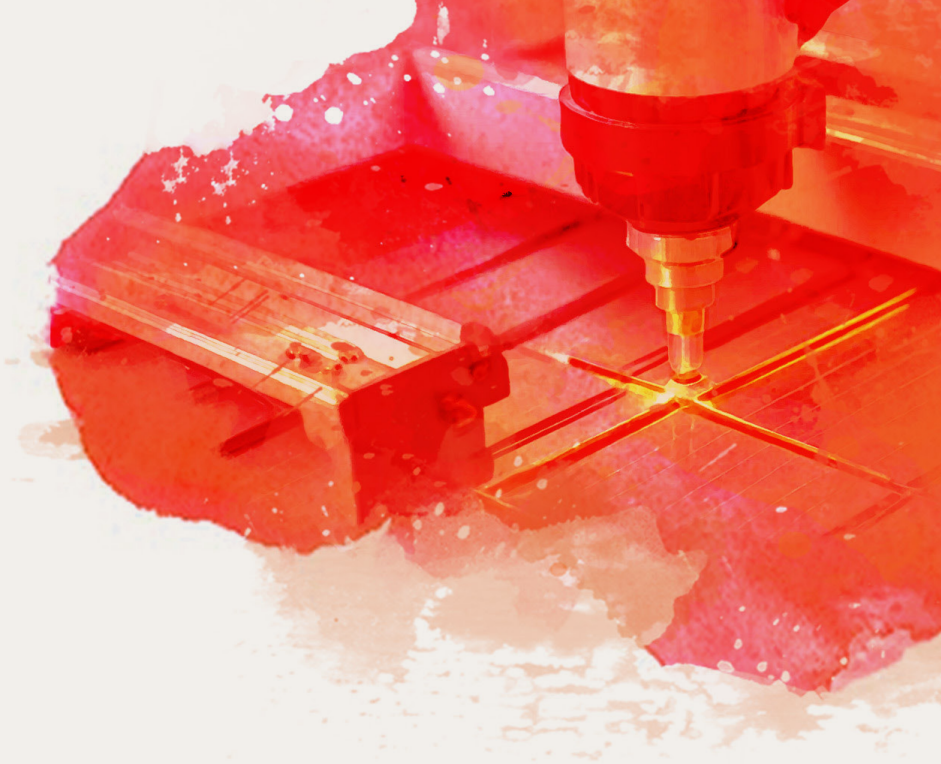


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# Training

## Dolni Brezany

### Description.

#### Training in high-power lasers for industrial applications

##### Aims:

- Equip the next generation of scientists with expertise in advanced laser technologies and industrial applications.
- Support non-specialist users from diverse scientific backgrounds in overcoming technical and scientific challenges related to laser technologies.
- Expand the transnational user base by attracting professionals from a wide range of disciplines.
- Enhance efficiency and foster collaboration with other European facilities, networks, projects and industries.

##### Topics covered:

The training focuses on key laser applications in manufacturing and industry, including:

- **Introduction to High-Average Power Diode-Pumped Solid-State Laser Systems** (e.g., Thin Disk Lasers, Multi-Slab Lasers)
- **Fundamentals of Selected Laser-Based Techniques and Applications:**
  - Laser Shock Peening (LSP)
  - Laser-Induced Damage Threshold (LIDT)
  - Laser Micromachining (LMM)
- **Overview of Advanced Characterisation Devices**
- **Hands-On Training at HiLASE Facilities**
  - Experiment design
  - Laser processing
  - Evaluation of results
- **Laser Safety Principles**

### Programme

## 16 October 2025

#### 09:00–12:30 Morning Session

##### Registration

##### Welcome by the Head of HiLASE:

- Introduction to Thin Disk Lasers
- Introduction to cryogenically cooled multi slab lasers
- coffee break
- Principles of LSP – Laser Shock Peening
- Principles of LIDT – laser-induced Damage Threshold

#### 13:30–17:00 Afternoon Session

- Principles of LMM – Laser Micromachining
- Overview of Characterisation Devices
- Visit of Laser facilities
- Wrap-up and networking

## 17 October 2025

#### 09:00–12:00 Morning Session

- Coffee & Networking
- Laser safety
- Visit of workstations – Hands-on training – LIDT facility

#### 13:00–17:00 Afternoon Session

- Visit of workstations – Hands-on training – LSP facility
- Visit of workstations – Hands-on training – LMM facility
- Wrap-up and networking

