

LASER-PRO: CATALOGUE OF SERVICES

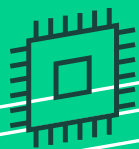
(V1.0 – Published 15/10/2025)



Applicants

- **Small and Medium-sized Enterprises (SMEs) and / or mid-cap Innovative Companies:**
 - from all activity fields addressing following application areas: **Sustainable Manufacturing / Semiconductor Technology / Biomedical Innovations / Digital and 3D Printing**

Type of company		Staff headcount	(and) Turnover	(and/or) Balance sheet total
Mid-cap		<3,000	N.A.	N.A
SME	Medium-sized	<250	≤ 50 M€	≤ 43 M€
	Small	<50	≤ 10 M€	≤ 10 M€
	Micro	<10	≤ 2 M€	≤ 2 M€



Technical services



Summary of technical services

Hilase

- Laser Shock Peening
- Laser Induced Damaged Treshold
- Laser Micro-machining and Surface treatment
- Laser and Thermal Modelling
- Heat-smart components' development
- Trainings

FTMC

- Long-term expertise in laser microfabrication with ultrashort-pulse lasers
- Equipment for Laser microfabrication
- Access to infrastructure
- Free form glass cutting
- Laser-induced selective metallization of dielectrics
- Industrial 3D metal printing
- Optical coatings
- Development of new laser sources

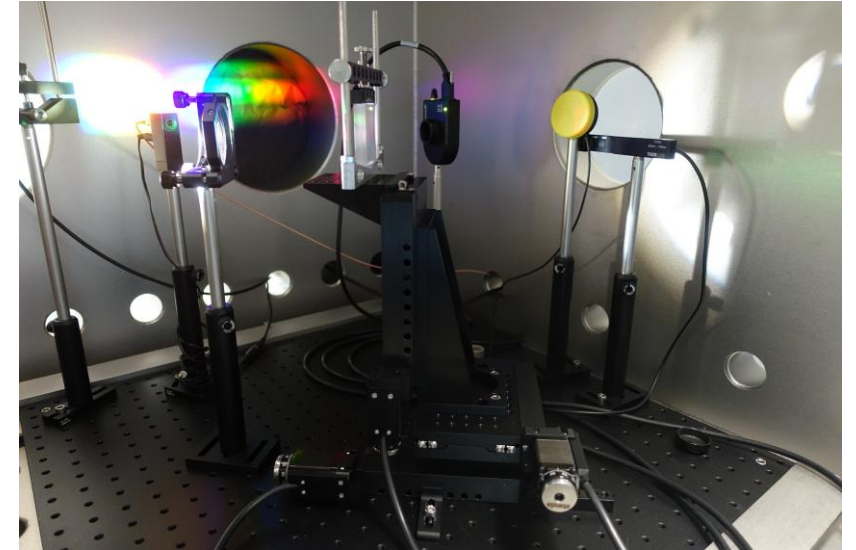
Laser Shock Peening (LSP) – HiLASE

- **What:** laser treatment increases fatigue life components of metallic components.
- **Where:** Dolní Břežany, Czech Republic
- **For whom:** manufacturers and developers of mechanical components
- **Why:** The main advantages of LSP include the high depth of introduced compressive stresses
- **Link:** <https://www.hilase.cz/en/produkty/laser-shock-peening-lsp/>



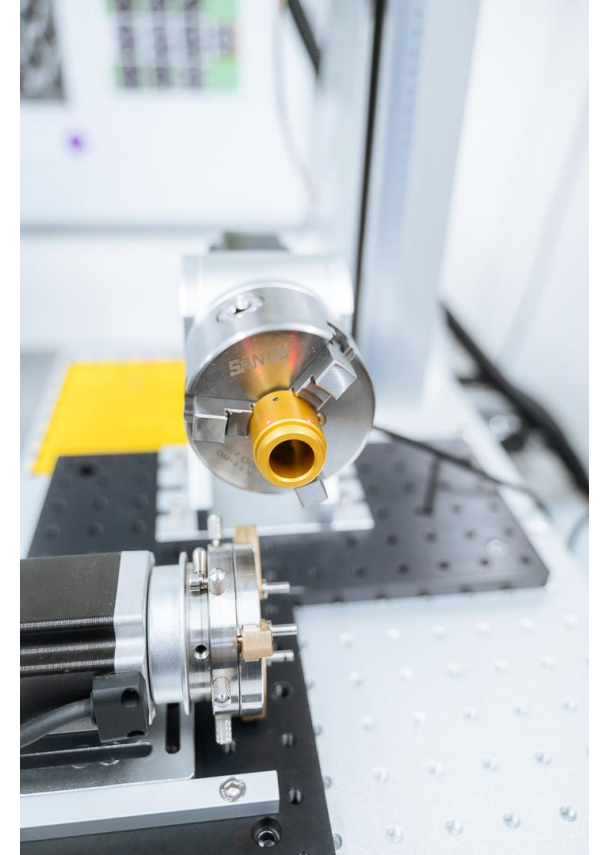
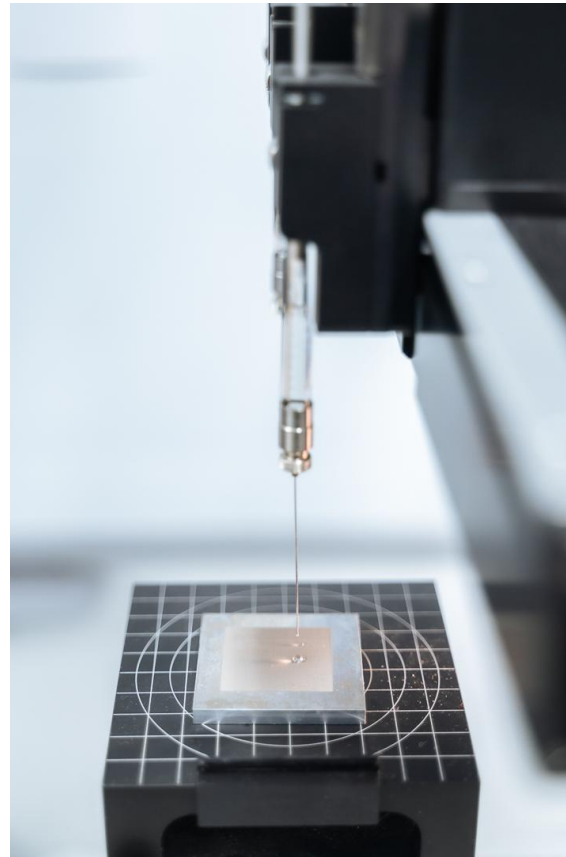
Laser Induced Damage Treshold (LIDT) – HiLASE

- **What:** top-class testing of materials and components on resistance to laser irradiation.
- **Where:** Dolní Břežany, Czech Republic
- **For whom:** manufacturers and developers of optical components
- **Why:** Thanks to having the best laser in the Czech Republic, we are able to provide the best in the laser field. We also offer case studies
- **Link:** <https://www.hilase.cz/en/produkty/laser-induced-damaged-threshold-lidt/>



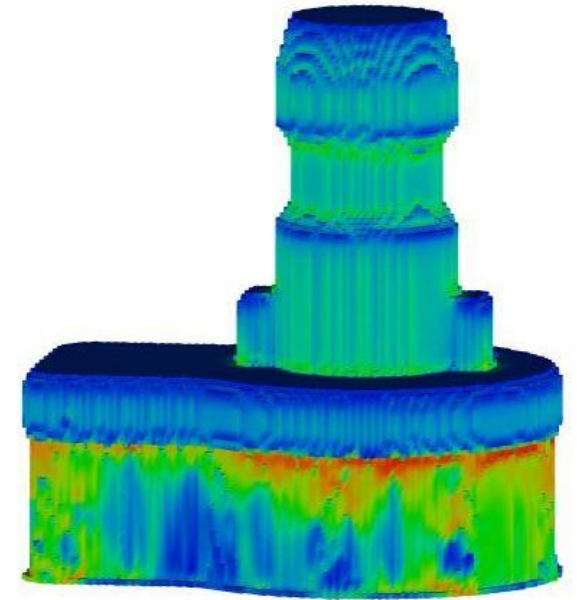
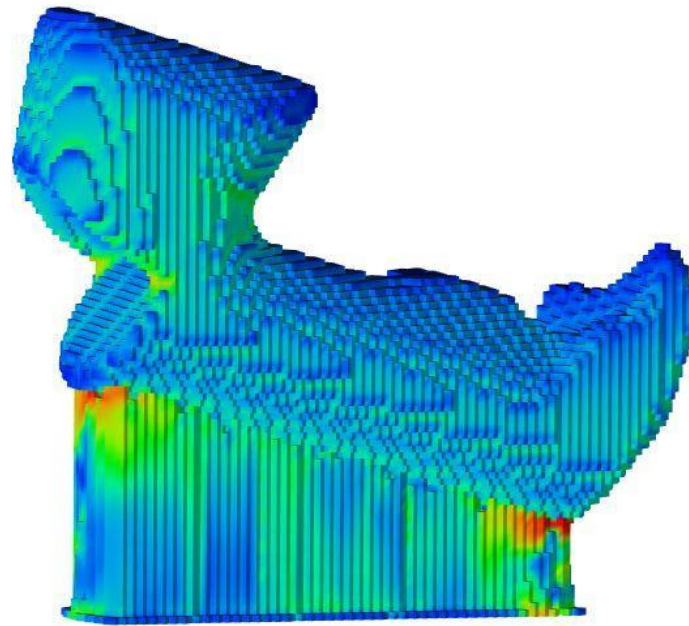
Laser Micro-machining and Surface treatment (LMM) – HiLASE

- **What:** high precision cutting and drilling, micro and nanostructuring for functional surfaces.
- **Where:** Dolní Břežany, Czech Republic
- **For whom:** Surface specialists
- **Why:** We can offer one of the best testing and processing of materials, thanks to our advanced technologies.
- **Link:** <https://www.hilase.cz/en/produkty/laser-micromachining-lmm/>



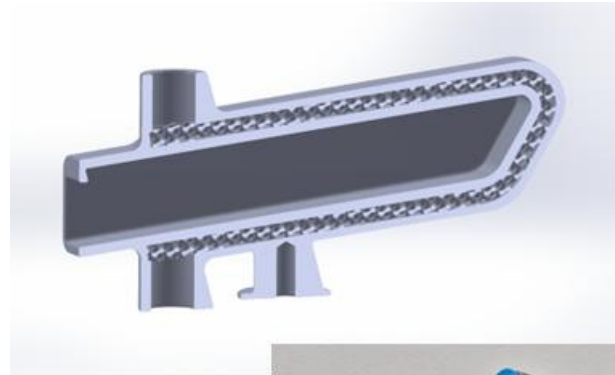
Laser and Thermal Modeling – HiLASE

- **What:** consultations, analyses, calculations, simulations.
- **Where:** Dolní Břežany, Czech Republic
- **For whom:** Laser Developers
- **Why:** In our center we offer unique technologies, interesting solutions of thermal modeling of lasers optomechanics components.



Heat-smart components' development – HiLASE & CARDAM

- **What:** consultations, analyses, design, calculations, simulations, small-scale production, testing.
- **Where:** Dolní Břežany, Czech Republic
- **For whom:** Laser Developers
- **Why:** We offer a collaborative development of 3D printed optomechanical components with enhanced heat management using mathematical structures.



Trainings— HiLASE

- **What:**
 - Laser Safety Trainings
 - Laser Safety Officer Training
 - Laser Maintenance
 - Laser Mechanics
 - Customized Laser Trainings – High Power Lasers, Laser technologies - LMM/LSP
- **Where:** Dolní Břežany, Czech Republic
- **For whom:** Laser users and developers
- **Why:** Professional teaching team of laser technology experts and practical part in our Edulab.



Learn more



Equipment for laser microfabrication– FTMC

- **What:** Laser microfabrication trials on various materials, processes: cutting, drilling, surface modification
- **Where:** Vilnius, Lithuania
- **For whom:** SME interested in application of laser microfabrication processes in their production.
- **Why:** A broad range of process parameters, with experience in microfabrication on various materials (dielectrics, glass, metals, etc.)

Lasers:

femtosecond lasers **Pharos, Carbide** (Light Conversion);
picosecond lasers **FemtoLux, Atlantic, PL10100** (Ekspla);
nanosecond lasers **Baltic HP** (Ekspla);
Pulsed CO₂ laser **Diamond E150** (Coherent);
optional **optical harmonic generation** at 532 nm, 355 nm and 266 nm wavelength;

Working stations for laser microfabrication with **XYZ** performance:

- **Akoneer, Aerotech, Feinmess, Physical Instruments;**
Galvanometric scanners for guiding laser beams:
- **ScanGine 14, HurryScan 14, ScanCube 10** (Scanlab)
for 1064 nm, 532 nm and 355 nm wavelength;

Analytic equipment:

- **Scanning electron microscope JSM-3490LV** (JEOL) with **EDS/WDS** analysis (Oxford instruments); Optical microscopes **Olympus BX51TF, NIKON ECLIPSE**; UV-VIS-IR spectrophotometer **Perkin Elmer 9500**; Stylus profiler **Dektak 150+** (Veeco); Optical profiler **Sensofar Atomic force microscope VEECO**

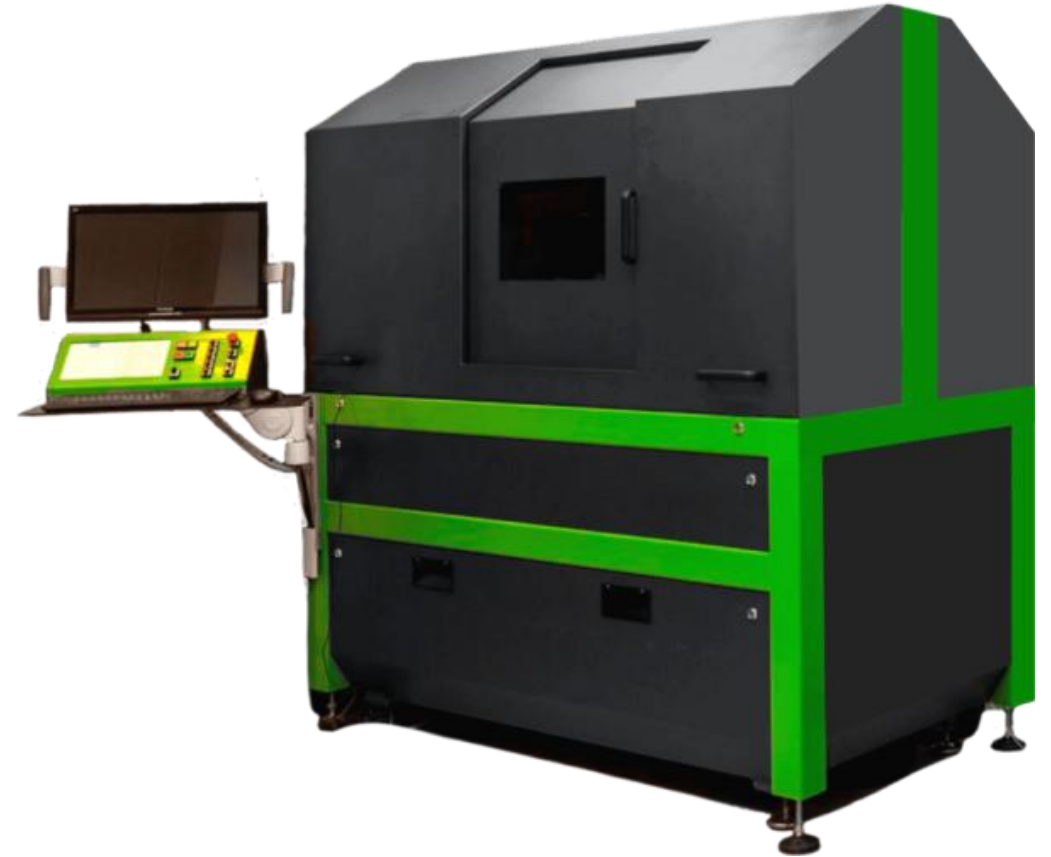
Access to infrastructure – FTMC

- **What:** EOS EOSINT M280 an industrial 3D laser printer
 - **Laser:** 200 W built-in Yb (Ytterbium) CW fibre laser
 - **Wavelength:** 1060-1100 nm
 - **Processing area:** 250 x 250 x 325 mm
 - **Positioning speed:** XY galvoscaner up to 7 m/s
 - **Degrees of freedom:** XY printing area, Z axis
 - **Precision:** Layer thickness 20 μ m
 - **Control:** Complete computer control with the import of CAD files
 - **Supported files:** 3D CAD files adapted to EOS machine
 - **Application areas:** Machinery, automotive, aviation, medicine, prototyping
- **Where:** Vilnius, Lithuania
- **For whom:** SMEs who need complex 3D metal components
- **Why:** Opportunity for prototyping components for various applications, including machinery, automotive, aviation, and medical.



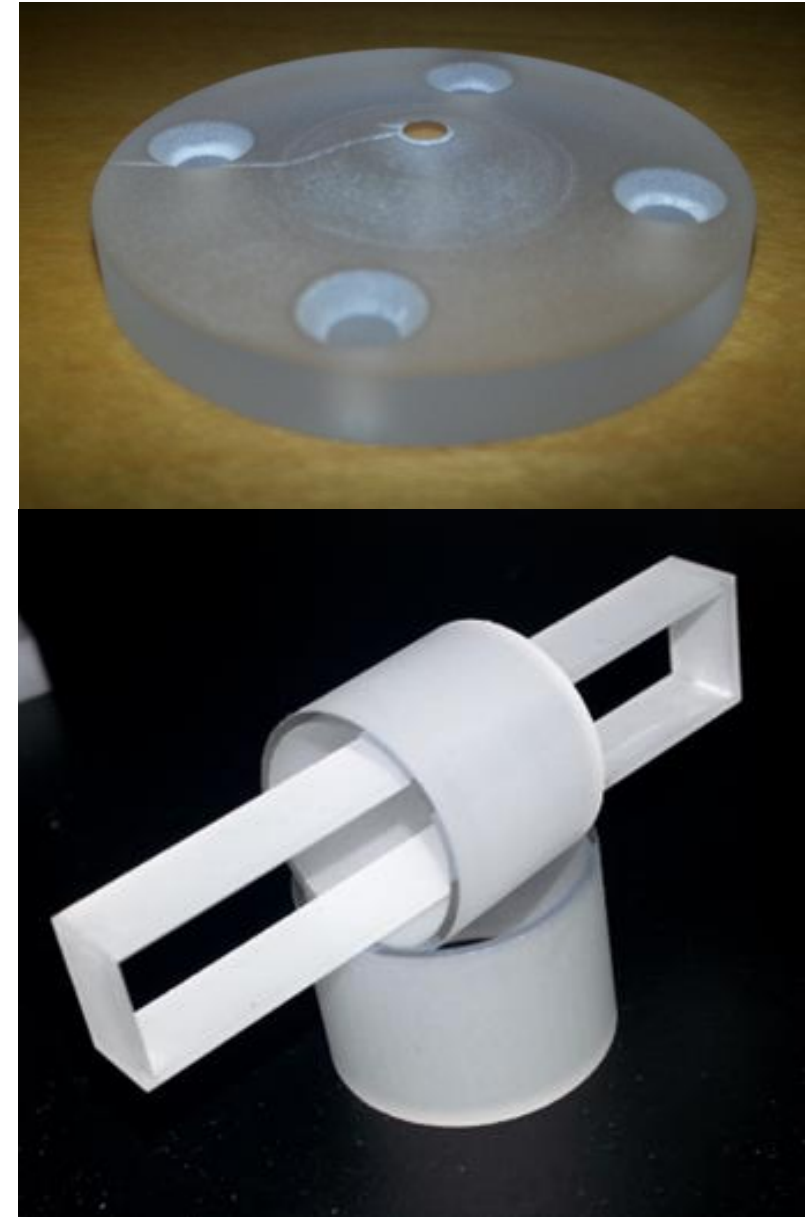
Access to infrastructure – FTMC

- **What:** Laser microfabrication system MASTER DUO
 - **Laser:** **Atlantic60** (Ekspla Ltd), pulse duration 10 ps; up to 80 W @ 1064 nm, 1 MHz rep rate.
Femtolux (Ekspla Ltd), pulse duration 350 fs – 1 ps, up to 50 W @ 1030 nm., 4 MHz, MHz, GHz, MHz+GHz burst modes
 - **Wavelength:** 1064 nm, 532 nm, 355 nm, 1030 nm, 515 nm.
 - **Processing area:** 600x300x150 mm (XYZ)
 - **Positioning speed:** XY galvoscaners 4 m/s, polygon scanner 100 m/s, positioning axis 2 m/s
 - **Degrees of freedom:** XY stage, 2 Z axes (Galvoscaner, objective), 2 rotational axes
 - **Precision:** 2 μ m
 - **Control:** Complete computer control with the import of CAD files, advanced vision control with CCD cameras
 - **Supported files:** G code, DXF, PLT, STL (3D) files
 - **Application areas:** Machinery, electronics, medical devices, photovoltaics
- **Where:** Vilnius, Lithuania
- **For whom:** SME interested in application of laser microfabrication processes in their production.
- **Why:** Opportunity to test laser process for such applications as machinery, electronics, medical devices, photovoltaics



Free form glass cutting - FTMC

- **What:** Laser-based techniques such as rear-side glass processing can offer high quality and throughput, which can be used for glass drilling, cutting and milling applications.
- **Where:** Vilnius, Lithuania
- **For whom:** Hi-tech photonics companies and SMEs who work with various forms of glass components
- **Why:** The laser-milled feature sizes can be reduced to $60\text{ }\mu\text{m}$. Laser cuts are taper-less, extremely high aspect ratio features that can be fabricated. Laser-based processing can maintain high throughput with the highest processing quality, keeping surface chipping below $15\text{ }\mu\text{m}$.



Selective Surface Activation Induced by Laser – FTMC

- **What:** Initial tests on dielectrics for laser-induced metallization of dielectric surface.
- **Where:** Vilnius, Lithuania
- **For whom:** SMEs working with electronic prototyping and applications
- **Why:** Unique technology for freeform precise formation of metal tracks on dielectric surface (glass, polymers, semiconductors, and ceramics)



Industrial 3D Metal printing– FTMC

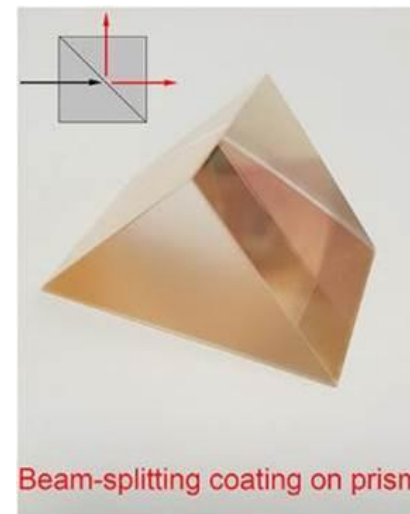
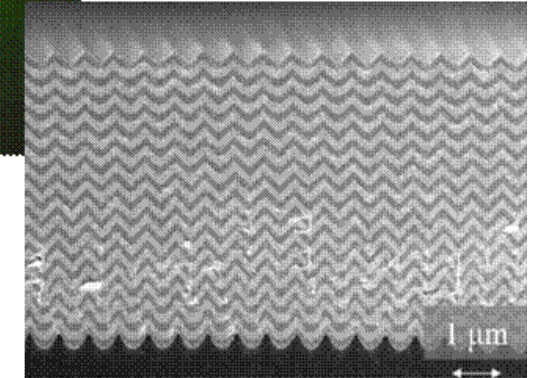
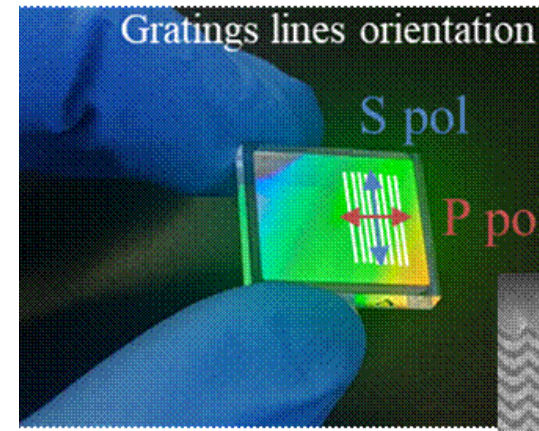
- **What:** Direct metal laser sintering (DMLS)
 - Rapid metal prototypes and production parts.
 - A range of metals can be used to produce final parts that can be used for end-use applications.
- **Where:** Vilnius, Lithuania
- **For whom:** SMEs working in machinery, automotive, aviation, medicine.
- **Why:** Prototyping possibilities and the possibility to create lightweight complex structures, which cannot be produced by traditional methods (CNC machines).



Optical coatings– FTMC

- **What:** Thin film technologies for micro and/or high-power lasers and various photonic systems.
- **Where:** Vilnius, Lithuania
- **For whom:** SMEs working in photonics, industrial and (or) research institutions
- **Why:** Coatings services:
 - Ion beam sputtering (IBS),
 - Magnetron sputtering (MS),
 - Electron-beam evaporation (with glancing angle and/or plasma ion assisted),
 - Atomic layer deposition (ALD)
 - Etching the subsurface of Fused silica and crystals

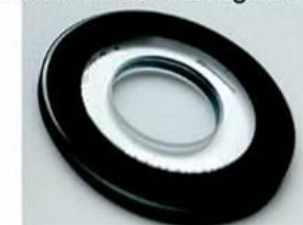
Optical and structural analysis



Beam-splitting coating on prism

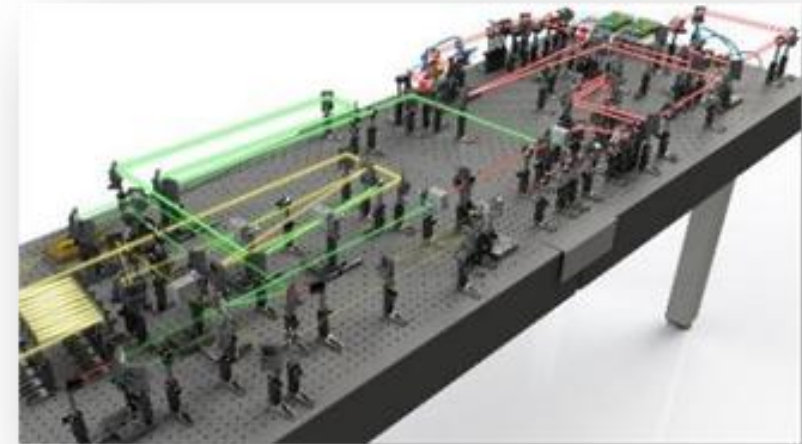
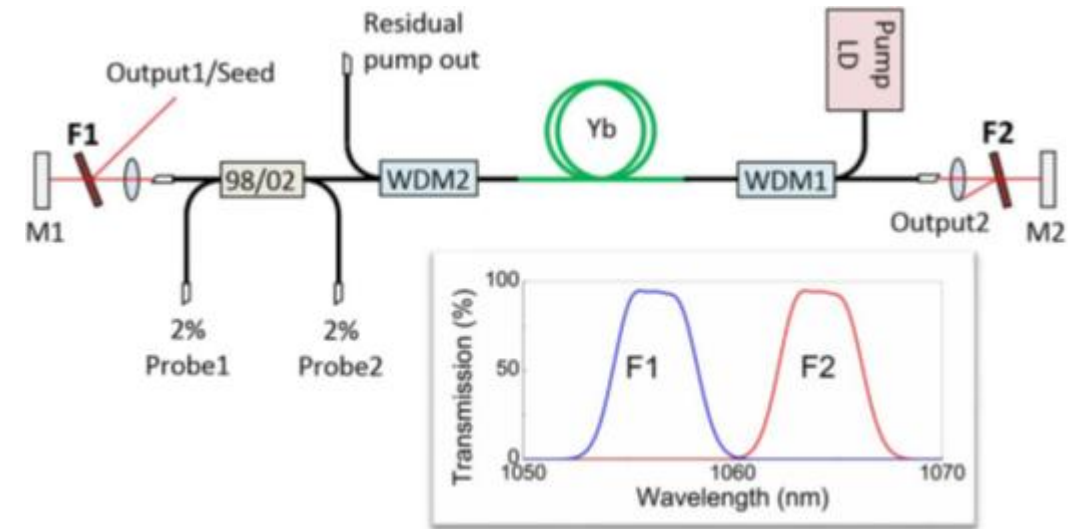


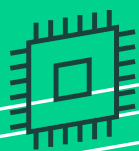
Silver enhanced mirror
Golden mirror
Chromium absorbing coating



Development of new laser sources– FTMC

- **What:** Development of solid-state and fiber laser technologies
- **Where:** Vilnius, Lithuania
- **For whom:** SMEs working photonics or laser application
- **Why:** High-output energy diode-pumped nanosecond lasers and high peak and average power picosecond and femtosecond lasers.
- Investigations of fundamental phenomena limiting the maximum output powers of fiber lasers and amplifiers;
- Broadband fiber laser radiation to higher optical harmonics;
- Development and research of innovative combination of fiber laser radiation (coherent, non-coherent and nonlinear);
- Femtosecond and picosecond fibrous oscillators

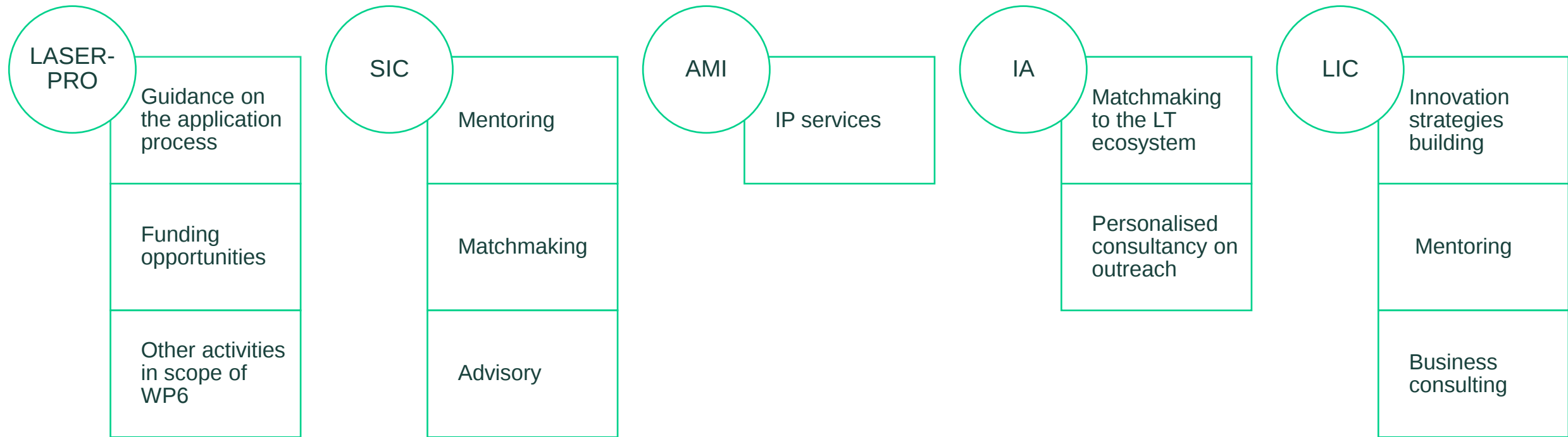




Non-technical services



Summary of non-technical services



Workshops – LASER-PRO

- **What:** Workshops offering key information on market validation, IP, technology transfer, and innovation financing.
- **Where:** Czechia, Lithuania, Ukraine (online)
- **For whom:** SMEs needing information on market potential, IP, tech transfer, and innovation financing.
- **Why:** Expert support for SMEs within the Laser-PRO project



Mentoring – SIC

- **What:** Tailored mentoring to support SMEs' growth, from establishment to strategic development.
- **Where:** Prague, Czech Republic
- **For whom:** For SMEs that need to gain knowledge for organizational development.
- **Why:** We provide expert mentoring and consulting to support innovation and accelerate business.



Matchmaking – SIC

- **What:** Tailored support to identify the ideal business partner and validate commercial potential.
- **Where:** Prague, Czech Republic
- **For whom:** For SMEs interested in networking and connection.
- **Why:** In Czechia, we have a wide network of business partners and experts in identifying the commercial potential of innovations.



Advisory – SIC

- **What:** *Tailored support with grant advice and identifying potential investors for business development.*
- **Where:** *Prague, Czech Republic*
- **For whom:** *For SMEs needing support in obtaining investment or grant funding.*
- **Why:** *We have a wide network of experts providing tailored guidance on grants and identifying potential investors.*



IP services – AMIRES

- **What:** Tailored IP search to identify patent risks early and support informed Innovation, summarised in a clear report.
- **Where:** Prague, Czech Republic
- **For whom:** SMEs who aim to patent their findings.
- **Why:** We provide professional consulting and evaluation of patent threats.

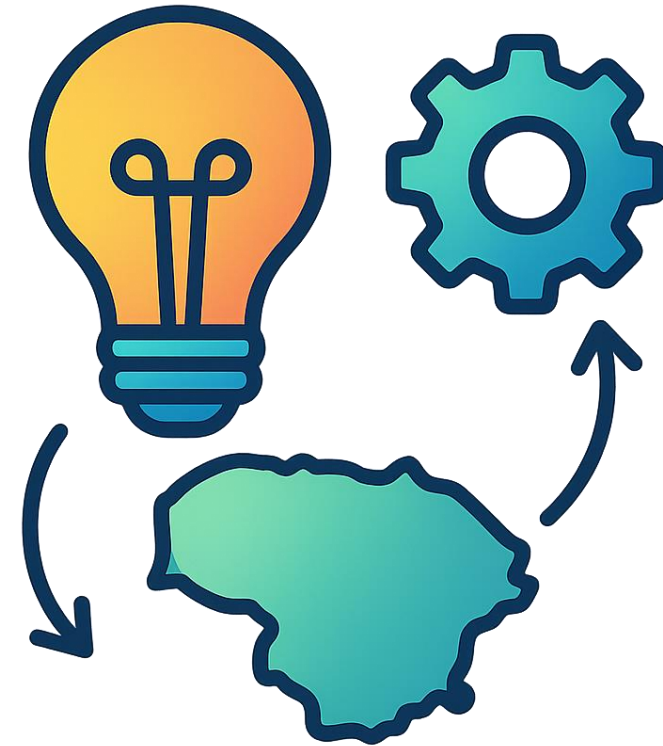
IP
SERVICES



AMIRÉS

Matchmaking to the LT ecosystem – IA

- **What:** matchmaking and establishing links with Lithuanian innovation ecosystem.
- **Where:** Vilnius, Lithuania
- **For whom:** SMEs seeking business partners and access to R&D and innovation networks in Lithuania.
- **Why:** At Innovation Agency Lithuania, we maintain direct ties with national industry associations and clusters, research institutions, and networking initiatives.



Personalised consultancy – IA

- **What:** Personalised consultancy on access to funding, competence development and ecosystem events.
- **Where:** Vilnius, Lithuania
- **For whom:** SMEs looking for funding guidance and wanting to build skills as well as strategic connections.
- **Why:** knowledge of and integration with Lithuanian and European initiatives.

