INSPIRING SCIENCE

We bring science to the general public and encourage young talent to take an interest in science and research. We organise not only a range of events for schools and the public but also the popular Talent Academy and Science Challenge competitions for talented high schoolers. We also maintain an educational website about lasers and optics for high school and undergraduate students - czechlasers.cz.







For up-to-date information, please visit: www.hilase.cz/en/events/ www.czechlasers.cz www.talentovka.cz www.sciencechallenge.cz

or at:



@HiLASECentre



LIGHT

IN GOOD COMPANY

We are part of **STAR (Science and Technology Advanced Region)**, a science and technology cluster made up of a strong community of research organisations, companies and investors operating in a defined area close to Prague. Our goal is to promote the cooperation of cutting-edge science with innovative industry, thus moving the competitiveness of the Czech Republic forward. We are part of the Brain4Industry (EDIH - B4I) innovation centre, which helps companies to make the most of the benefits and opportunities of digital technologies and artificial intelligence.

We work closely with a number of universities and research institutions in the Czech Republic and globally.

We also successfully cooperate with a number of major companies operating in a wide range of industries, from manufacturers of optical components to the automotive industry

hilose

Contact

HiLASE Centre · Institute of Physics of the CAS, v. v. i. Za Radnici 828 · 252 41 Dolni Brezany lase.cz











hilose

SUPERLASERS FOR THE REAL WORLD

Excellence in research and innovative laser technology for industry

CUTTING-EDGE LASER TECHNOLOGIES AND LASERS WITH BREAKTHROUGH TECHNICAL PARAMETERS AND WIDE-RANGING APPLICATIONS FOR INDUSTRY





applications



A unique combination of experimental laser development and advanced industrial

Unique highpower lasers with breakthrough parameters

Development of innovative technologies

OUR VISION

The HiLASE Centre wants to become one of the respected leaders in the application of high power lasers. Our ambition is to be the R&D Partner of first choice for companies and research organizations looking for innovative laser technologies and solutions, both on Earth and in Space.

BIVOJ LASER SYSTEM

Pulsed nanosecond diode-pumped solid-state laser measuring 3 x 18 m

A superlaser that was the first in the world to exceed 1kW in its class. In 2022, the BIVOJ laser system was operated for an hour at a pulse energy of 145 J in a 10 ns pulses at a repetition rate of 10 Hz at a wavelength of 1030 nm!

LASER SYSTEM PERLA®

Compact picosecond laser platform generating radiation from infrared to ultraviolet

A versatile tool for industry and laser micro- and nano-machining. Thanks to the PERLA® system, the HiLASE Centre has set two world records in multibeam laser nanostructuring - both in the speed of production of laser-induced periodic nanostructures on stainless steel and in the number of beams simultaneously modifying the material surface (40,401!).





"The DNA of the HiLASE Centre is made up of three values: uniqueness, usefulness and credibility. That is why we will continue to push the boundaries of laser technology, seek new applications and contribute to the prosperity of the Czech and European economy, people's everyday lives and a sustainable future. Through our activities we want to inspire laser scientists, engineers and entrepreneurs."

Tomas Mocek, Ph.D. Head of HiLASE Centre

OUR PRODUCTS AND SERVICES



Sustainable and original solutions for industry

An international team

and opportunities for talented scientists from the Czech Republic and abroad





LASER SHOCK PEENING (LSP) A technology for extending the life of metal components, e.g. in aerospace, automotive, mechanical or heavy industry, energy or biomedical applications.



LASER INDUCED DAMAGE THRESHOLD A method that identifies manufacturing defects in optical components and contributes to the safe and reliable operation of laser systems. Our LIDT laboratory has a quality management system in place for its activities and has been awarded ISO 9001 certifica tion.



GOPICO® FIBER OSCILLATOR Pulse source for PERLA® lasers. stable and robust design



THE PERLA® 100 THIN-DISC LASER SYSTEM

The perfect tool for modern multibeam micromachining and laser surface structuring.



OPEN ACCESS Free use of the HiLASE Centre's research infrastructure for other scientists upon successful application.



LASER MICROMACHINING Drilling micrometre holes, precision cutting and surface structuring a way to improve product functionality and increase added value and competitiveness.



LASER SAFETY TRAINING Basic Laser Safety Training (LST) and advanced training for Laser Safety Officers (LSO).



