



# LABORATORY OF OPTICAL MEASUREMENT METHODS

## Main objectives and activities of the laboratory

- development and application of interferometric and holographic measurement methods,
- measurement and visualization of quantities from various physical and technical disciplines,
- providing expert consultancy and expertise in optical measurement, optics and optoelectronics.

## Professional focus of the laboratory

- coherent measurement methods e.g. digital holographic interferometry, digital holographic microscopy or advanced interferometric techniques,
- automation of measuring, instrumentation and calibration of measurement devices,
- development of software for data processing and visualization, analysis of measurement uncertainties.

## Specific equipment

- lasers operating at different wavelengths,
- wavelength tunable laser source,
- laser diodes with current and temperature controllers,
- acousto-optical and electro-optical light modulators,

- spatial light modulator,
- optical and opto-mechanical components,
- cameras with CCD or CMOS sensors, photodiodes,
- lenses and microscope objectives,
- fibre components and optical fibres,
- optical power and energy meters, luxmeters, current sources, arbitrary waveform generators, oscilloscopes, etc.
- vibration damped optical tables

## Offered technologies and expertise

- non-destructive testing of mechanical structures (small displacement, stress, strain) in the whole surface,
- non-contact measurement of vibration amplitudes and the modal structures visualization with a high spatial resolution and dynamic range (1 nm–20 μm),
- topography measurement of objects,
- 3D measurement of density, temperature, velocity or concentration distribution in liquids,
- research of transfer phenomena (heat, mass, energy transfer),
- visualization and dynamic analysis of components based on MEMS and MOEMS,
- visualization and microscopic measurements of the topography of biological samples, components, microstructures,...

