

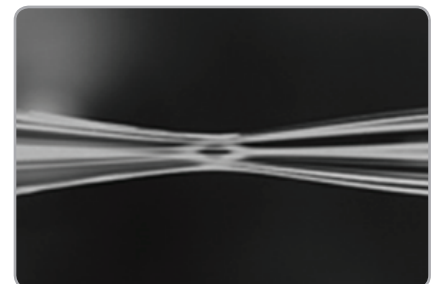
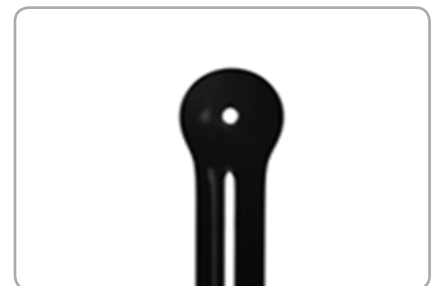
NETWORK GROUP, s.r.o. was founded in 1995 as a company focused on the distribution of metallic and fiber optic cabling systems. In the year 2000, company expanded its activities to the PCB assembly processes. In 2010, complementing its business and manufacturing activities, the company established a R&D department focused to the research and development of special fiber optic components. Several R&D projects were opened for the development of the advanced industrial fiber sensing elements and interrogators.

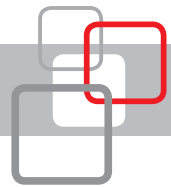
The most important part of the technological department in NETWORK GROUP is the processing unit for the fabrication of Fiber Bragg Gratings (FBG), which are mainly used in sensing systems, but also in some other areas where the optical signal filtering is needed, for example in the field of telecommunication.

FBG writing process implemented in NETWORK GROUP is based on the phase mask exposition by the pulsed excimer KrF laser. Parameters of the manufactured FBGs are monitored in real time to guarantee high precision of the required parameters and high repeatability of the production.

Besides FBGs, NETWORK GROUP has a unique technology for fiber optic processing: LDS - Large Diameter Splicing System, which is capable of:

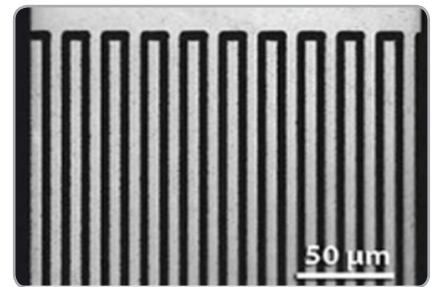
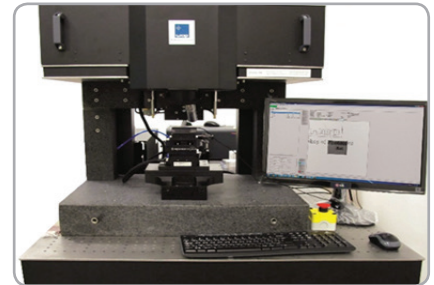
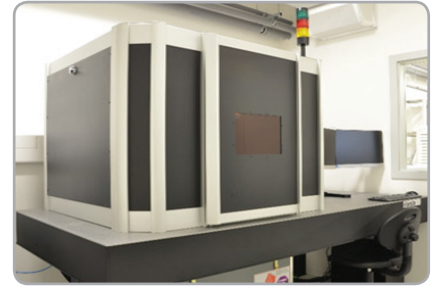
- Splicing of optical fibers with different diameters - 125 μm up to 2 mm, with Ring of Fire® technology
- Splicing of Photonic-crystal fibers (PCF)
- Tapering - symmetrical, asymmetrical, short and long tapers (up to 85 mm)
- Endcapping - creating lenses at the ends of the optical fibers
- Splicing of optical lenses and prisms on the fiber endface
- Creating components for high performance fiber lasers (pump combiners)





FemLAB - micromachining system with femtosecond laser. This unique device is capable of:

- Laser micro-machining with sub-micron precision
- Micro-machining of extremely fragile and hard materials
- Inscribing of permanent refractive index change in materials
- Selective ablation of thin films
- Planar waveguide manufacturing
- Laser lithography, multiphoton polymerization etc.



With our current technological capabilities and unique know-how we are able to form unique products based on combination of optical sensing principles, fibers and casings in Low Temperature Co-fired Ceramics (LTCC). Combination of these technologies leads to miniaturization, higher accuracy of optical sensors and opens possibilities for completely new sensory solutions in many areas (physical, chemical, biological, etc.).

NETWORK GROUP has specialized on design, development and production of optical sensors. With the team of specialists and know-how of its own R&D department, its own production division and the unique technological equipment, NETWORK GROUP can offer various types of cooperation and services from the custom design and fabrication of the optical sensors and their optical and opto-mechanical assemblies up to full design and manufacturing of customized interrogation units for optical sensing.

Our Projects

- WIM (weigh-in-motion) sensor for weighing moving vehicles in road transport
- System for measuring micro changes of the reactor containment at the nuclear power plant, Long-range calibration of the sensors and interrogator for the Temelin (CZ) nuclear power plant
- Fiber-optic sensors for measurement in nuclear power plants at over-project accidents
- Intelligent technical textiles for critical infrastructure security
- Temperature measurement in a vacuum plasma chamber
- LTCC casing based sensors
- Fiber based sensors for measurement of Temperature, Vibration, Pressure, Displacement, Bend, Tilt, Mechanical Deformation etc.
- Interrogation units for FBG / Fabry-Pérot based sensors

 **NETWORK**
group
SPECIAL FIBER OPTICS