

FIBRAIN ®

Photonics

THE ONE STOP SHOP FOR SPECIALTY FIBER AND PHOTONICS

2017

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Fibrain is the largest Polish conglomerate operating in the broadly considered field of fiber optics and photonics. The company owns 4 large factories, which allows it to be the end-to-end manufacturer of complete passive infrastructure systems for optical telecommunications. The company operates a large scale Connectivity factory (easily amongst the top 3 in Europe), where it produces all types of optical connectors, including the MPO/MTP and master class connectors. Its optical cables factory is perhaps the most modern in Europe, having been opened in 2012 and expanded twice since. The types of cables manufactured in the factory include for example microcables, direct-bury, riser, aerial, steel-armored or hybrid cables. The company runs a plastic injection molding factory, which manufactures, amongst other products, telecom closures, distribution cabinets or wall outlets. Fibrain also assembles and produces passive devices like TFF filters, PLC splitters, FBT couplers or LPG gratings. The mass-scale manufacturing capabilities are supplemented by a sheet metal workshop, where the company produces for instance cabinets, LGX units or patch panels. All of the abovementioned products are designed, developed, tested and qualified in house.



But serving the mass-scale telecom market is only one aspect of our activities. The other is **specialty fibers and photonics**, and the two aspects combined together bring in a truly unique offering and capabilities. Our photonics products and services are based on solid technological foundations as Fibrain operates a specialty fibers factory - its in house technical capabilities cover the whole **silica fiber manufacturing** process, starting from making preforms in the MCVD technology (with full preform characterization), making microstructured preforms in the stack&draw technology and then drawing and coating fibers and characterizing them. The whole fiber making process takes place in cleanrooms, resulting in superb mechanical strength of our fibers. Available fiber diameters range from 50 μm to 1 μm and specialty fibers cabling service is also available. The fibers can also be color-coded. Similarly, we offer a broad range of silica glass rods and capillaries with very strict geometrical tolerances and their glass purity tailored to requirements.

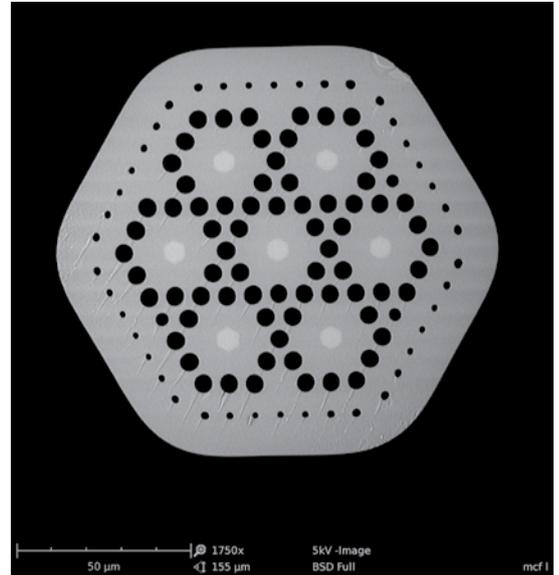


Extensive optical fiber processing capabilities are also possible thanks to the state-of-the-art equipment. The company owns CO2 laser splicers, specialty fiber&PM fiber arc splicers or hydrogen torch-based FBT and tapering stations. The fiber processing stations are equipped with high resolution cameras, end-view capabilities, XYZ-axes micropositioning with a very long Z-axis movement range and rotation adjustment. The company also owns several fully automatic 6-axes alignment workbenches with programmable aligning routines, suitable for example for laser coupling or micro-optics positioning. All glass processing and micropositioning stations are housed in class ISO 7 cleanrooms. Customized fiber polishing requests are also welcome. With comprehensive experience in optical adhesives, chemical fiber and glass processing (e.g. silica and other glasses etching, surface roughening or texturizing) and dedicated chemical lab, Fibrain is very well positioned to engage in **dedicated R&D projects and services** inquiries. In addition to the product families and technologies listed below, **we welcome customized requests.**

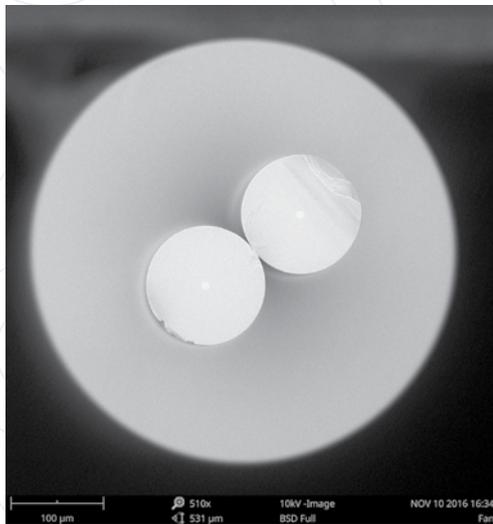
You may reach us at fiber@fibrain.pl

SPECIALTY FIBERS CAPABILITIES

- customized optical design,
- multicore optical fibers,
- high proof-test fibers,
- coreless fibers,
- non-standard fiber diameters,
- polyimide coating,
- metallized fibers,
- fiber drawing services,
- rods and capillaries drawing services (also with high OD tolerance),
- cabling and connectorization services, including cable design.



Developed with InPhoTech



FIBER PROCESSING PRODUCTS AND SERVICES

- down- and up-tapers with predefined profiles,
- fiber chemical etching and polishing,
- fiber mechanical polishing,
- long period gratings,
- specialty FBT couplers (also for sensing and low PDL applications),
- multimode power combiners,
- fiber bundles,
- glass capillary needles,
- end-face lenses (ball, axicon, other shapes),
- very dissimilar fibers splicing,
- fiber overcladding (in collapsed external glass capillaries),
- high tensile-strength splicing,
- metallized fiber ends,
- end caps splicing & coreless fiber splicing,
- mode field converters,
- reflection-less fiber termination.

OTHER SERVICES AND TECHNOLOGIES

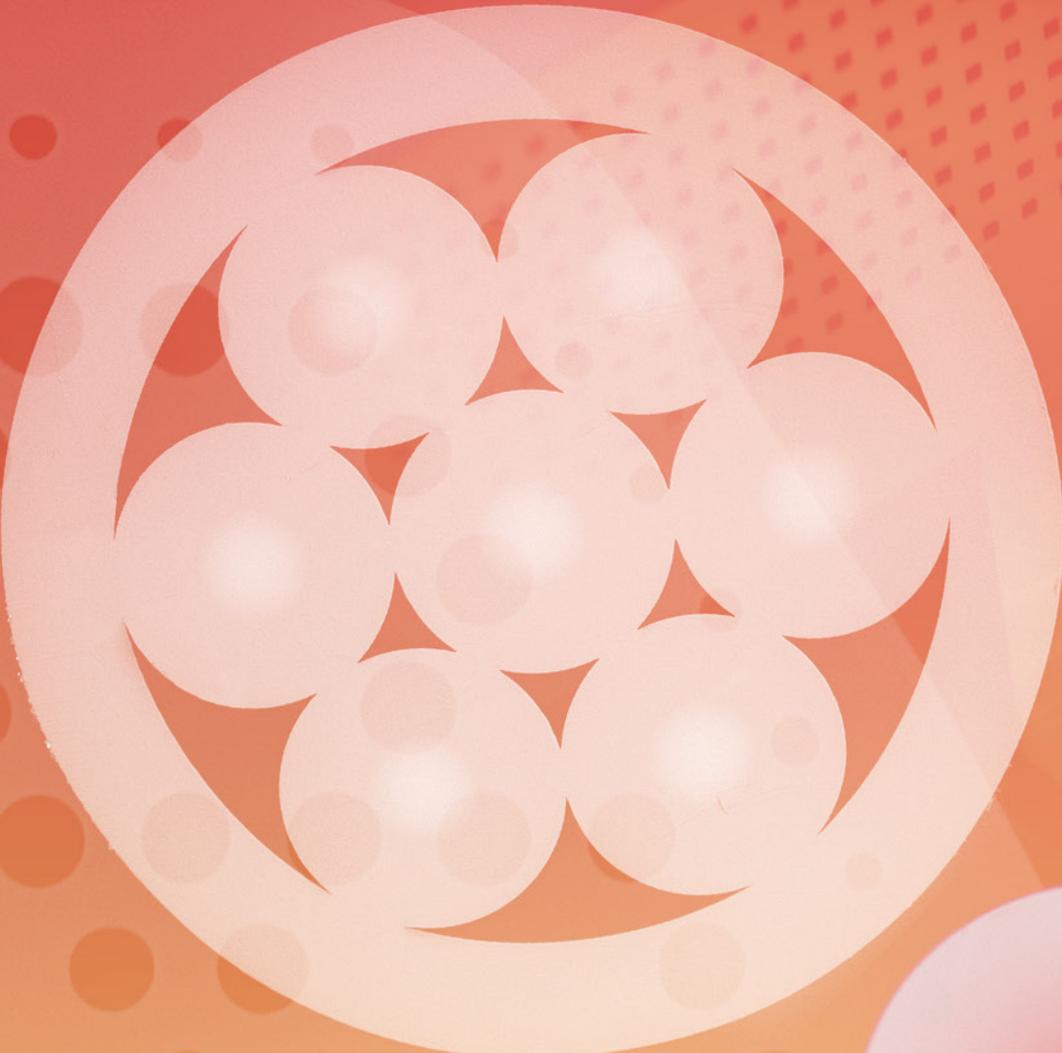
- PM connectors and components,
- high power physical contact connectors,
- master class connectors (with controlled concentricity),
- laser diode coupling,
- micro-optics positioning,
- customized laboratory glassware manufacturing,
- glass surface texturing and roughening,
- soft light diffusers on most glasses (with controlled diffusion factor),
- silicon and other semiconductors isotropic and anisotropic etching.



With our technical capabilities sky is the only limit! We invite custom inquires and embrace new challenges.

Please tell us your requirements and we will find the way to meet them!*

*fundamental physical limitations apply



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