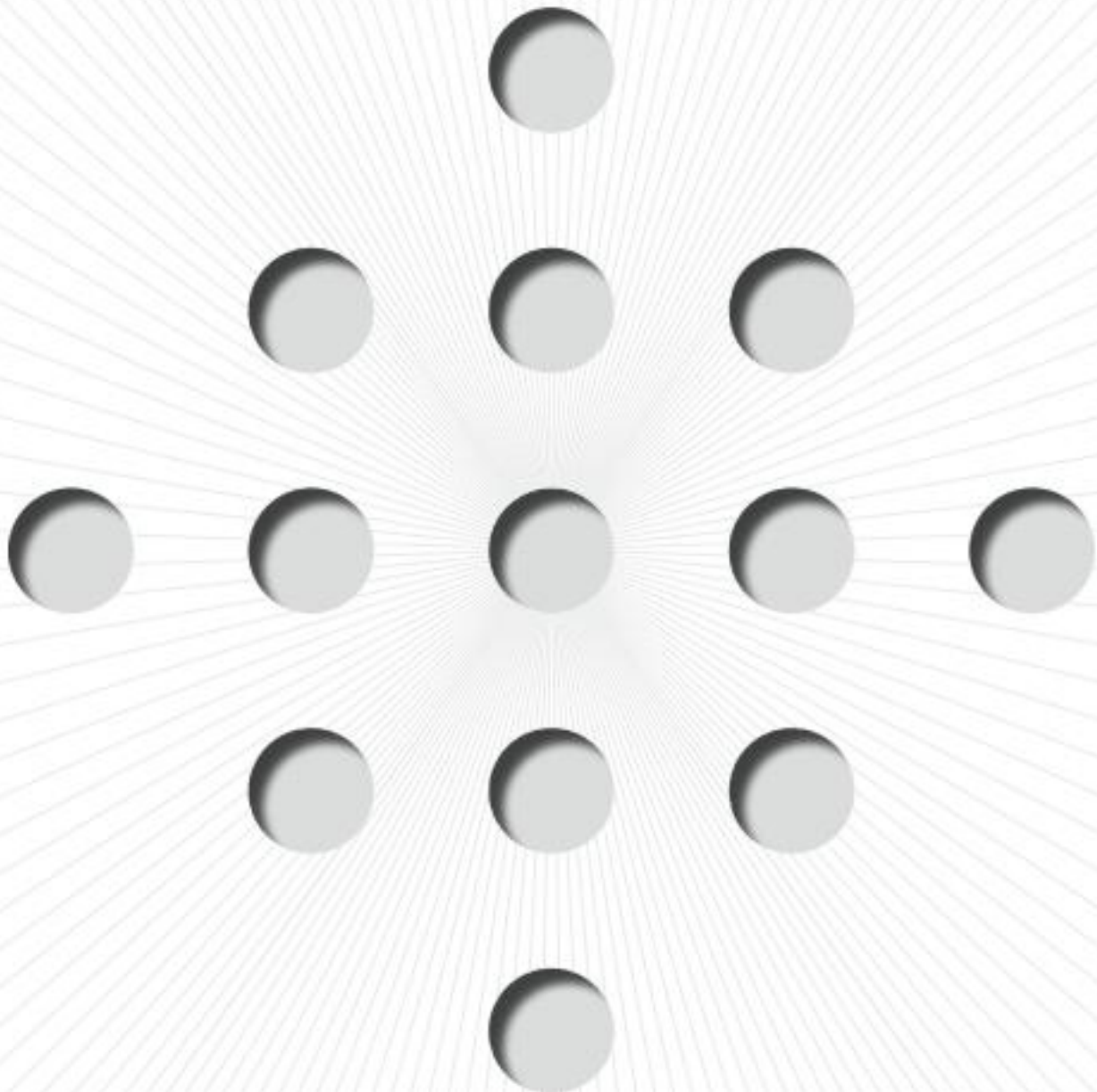


FIBER DRILLING



Workshop of Photonics



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Workshop of Photonics

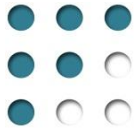
FIBER DRILLING

Workshop of Photonics*, a laser technology research and development brand of Altechna Co. Ltd, develops techniques for optical fiber processing using femtosecond laser instruments.

Fiber laser processing has yet many different applications in the fields of telecommunication, bio-sensing, precise measuring, etc. In some processes like fiber core drilling, bulk engraving, laser is an indispensable tool which allows keeping better rigidity of the fiber, to avoid micro-cracks and to achieve better flatness of machined surfaces.

We can offer you:

1. We have the ability to manufacture and design fiber optic products to meet your application needs (feasibility studies).
2. Small scale production.
3. FemtoFAB workstation for optical fiber drilling application.
4. As options, AR coating, metalizing and fiber assemblies are available in-house.
5. Progressive discount for large quantities order.



OUR ABILITIES

1. **Type of Fiber:** polarization-maintaining optical fiber, single mode fiber, multimode fiber, microstructured fiber.
2. **Standard profiles of the hole:** circle, square, rectangular, ect.
3. **Standard diameter:** from 10 μm .

Some optical sensing applications (e.g. incorporating FFPI – fiber Fabry-Perot interferometer) require flat inner surface holes (rectangular hole instead of round), so adequate geometry holes should be achieved. Flat and parallel walls of the hole should ensure better sensor sensitivity, while more symmetrical nature of holes should result in less fragile sensor and better stability.

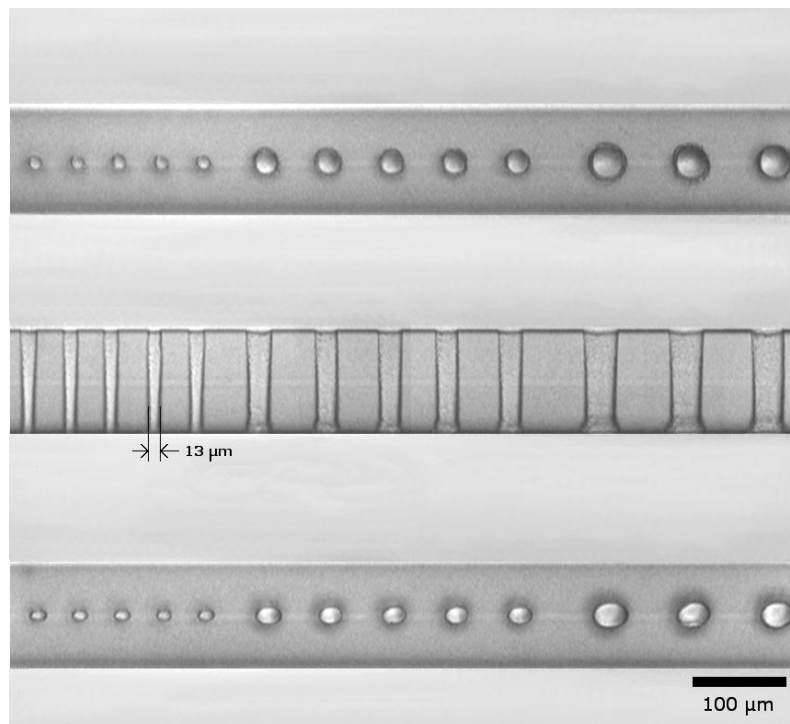


Fig. 1 Photos of holes drilled in 125 μm diameter single mode fibers.



Fig. 2 Rectangular holes (through and blind) drilled in 125 μm diameter single mode fibers for fiber Fabry-Perot interferometer (FFPI) applications: measurement of refractive index of material filling the hole, temperature, deformation, flow, etc.

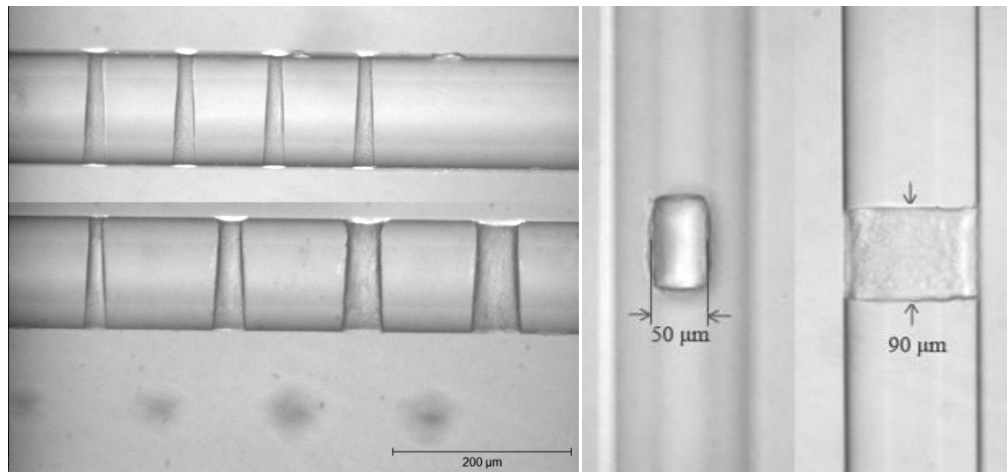


Fig. 3 Round and rectangular holes of various diameter drilled in 125 μm diameter multi mode fibers.

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