

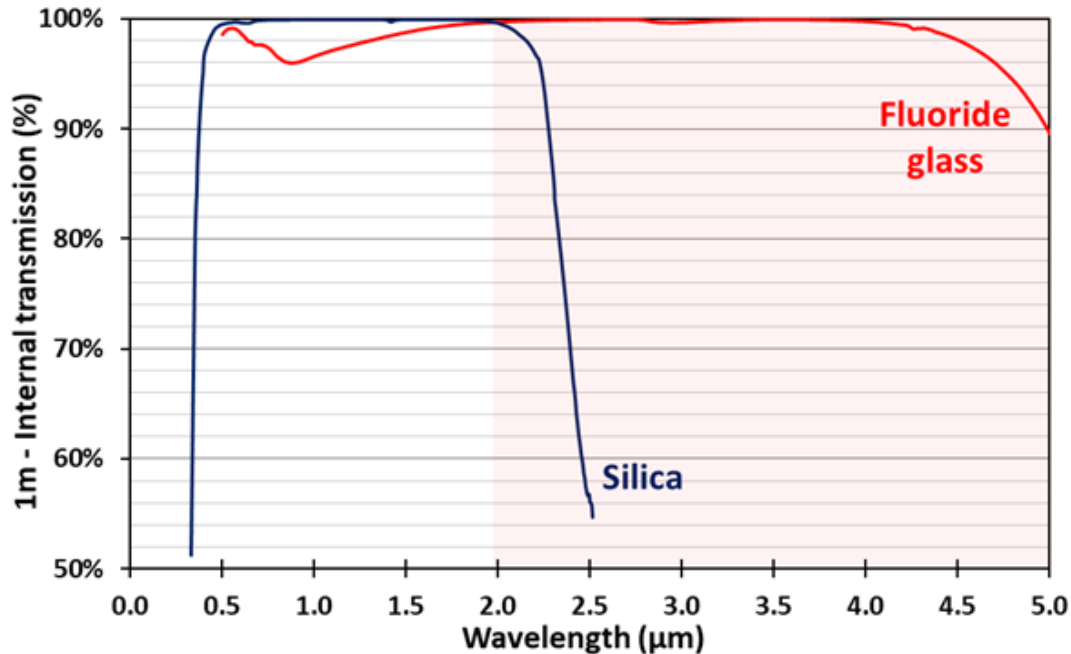


LE VERRE FLUORÉ
INFRARED SOLUTIONS

OVERVIEW OF THE COMPANY & FEMTOSECOND LASERS

Interests of the fluoride glass technology

High transparency from UV to mid-IR (up to 5.5 μm)








Fluoride glass fibers exhibit the best transparency among all technologies in the 2000 nm – 5000 nm range

Many rare-earth transitions for visible and mid-IR lasers and amplifiers allow a new generation of fiber lasers and amplifiers :

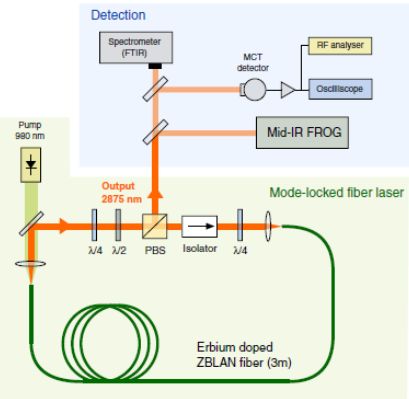
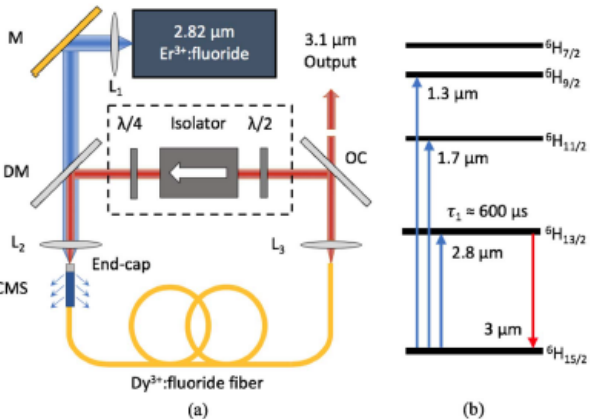
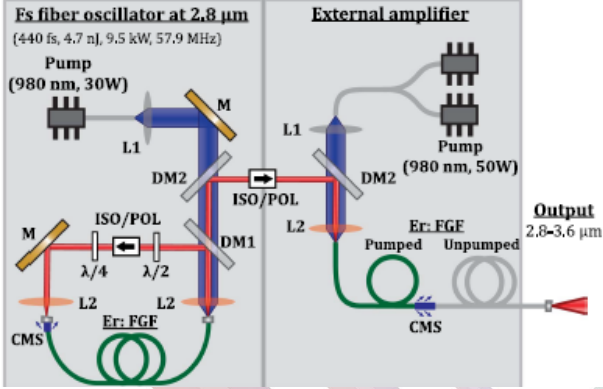
- Multiwatts visible (red, green, yellow, blue) single mode fiber lasers,
- Multiwatts mid-IR fiber lasers,
- Telecom amplifiers (O-band and E-band)

5 product lines and their applications

 <p>ACTIVE FIBERS</p>	 <p>FIBER MODULES</p>	<p>Visible, NIR and MIR fiber lasers : medical applications, sensors, material processing</p> <p>MIR supercontinuum laser source : mid-IR spectroscopy, OCT, infrared countermeasures</p>
 <p>PASSIVE FIBERS</p>	 <p>FIBER COMPONENTS</p>	<p>Multimode or singlemode light transmission from UV (300 nm) to Mid-IR (5500 nm) : Industrial spectroscopy, astronomy telescopes coupling, high power laser delivery (e.g. : ErYAG)</p>
 <p>BULK FLUORIDE GLASSES</p>	<p>Undoped or rare-earth doped bulks, prisms and tubes :</p> <p>Visible and mid-IR solid-state laser (2.8 μm, 3.4 μm),</p> <p>Light conversion (in UV and visible range)</p>	

Fluoride glass fiber femtosecond lasers

Academic results

2.8 μm 500 fs laser	3.1 μm 800 fs laser	2.8 μm -3.6 μm tunable 160fs laser
		
<p>Universities of Sydney and Macquarie, 2015 http://dx.doi.org/10.1364/OL.40.004226 Commercialized by FEMTUM</p>	<p>Politecnico Milano, COPL, Femtum, 2018 https://doi.org/10.1364/OL.44.000395</p>	<p>COPL, 2016 http://dx.doi.org/10.1364/OL.41.005294 Commercialized by FEMTUM</p>

Future developments :

2.8 μm – 4.5 μm tunable fs laser

Dispersion engineered PCF fibers for mid-IR fs laser delivery