

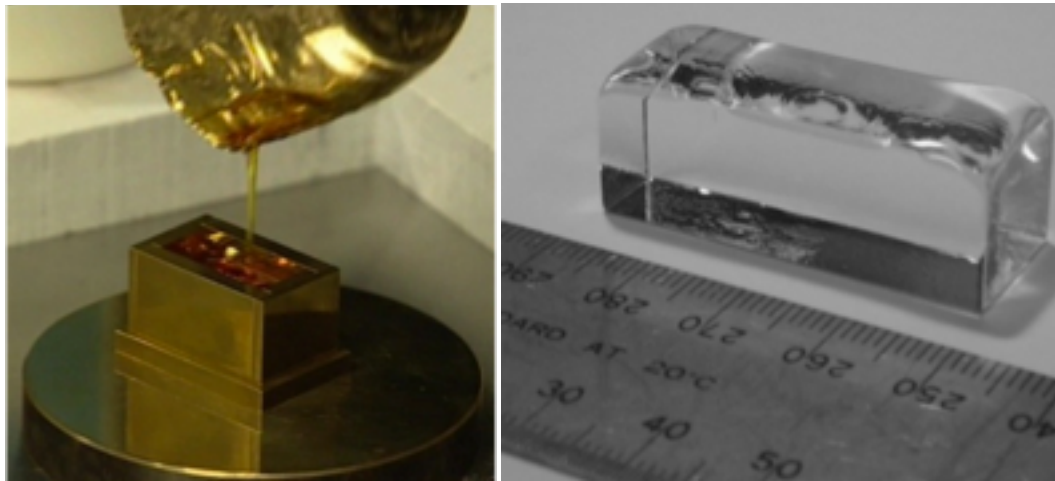


Institute for Photonics & Advanced Sensing (IPAS)

ZBLAN Glass

www.ipas.edu.au

IPAS can produce ZBLAN fluoride glass in a high-purity bulk form that is suited to a range of applications including waveguide use. ZBLAN is a heavy metal fluoride glass, which shows a wide transmission range of 0.3-5 μ m and high emission efficiency for rare earth ions. IPAS can produce undoped or rare-earth doped ZBLAN glass blocks of up 20mL volume (100g) in a wide range of shapes. The glasses are melted under a controlled atmosphere, which ensures high purity and low water content. Rare earth ion dopants include: Erbium, Holmium and Thulium (others on request). For pricing and availability, please contact [Luis Lima-Marques](mailto:Luis.Lima-Marques).



The Institute for Photonics & Advanced Sensing (IPAS)

IPAS brings together physicists, chemists and biologists to pursue a new transdisciplinary approach to science.

We are developing novel photonic, sensing and measurement technologies that are changing the way science is done within traditional discipline areas, stimulating the creation of new industries, and inspiring a new generation of scientists to be engaged in solving real-world problems.

IPAS research targets applications in four key market areas: defence and national security, environmental monitoring, preventative health, food and wine. We have world leading facilities for the production of novel soft and silica fibres, surface functionalisation and sensor development.

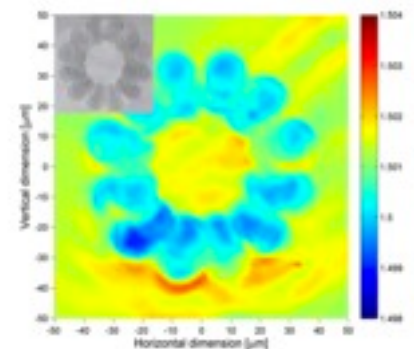
COMPOSITION

$53\text{ZrF}_4\text{-}20\text{BaF}_2\text{-}4\text{LaF}_3\text{-}3\text{AlF}_3\text{-}20\text{NaF}$

PROPERTIES		ZBLAN GLASS
Optical	Transmission range	0.30~5.0 μ m
	Refractive index (nd)	1.51
Thermal	glass transition temperature (Tg)	265°C
	Thermal expansion (a)	200x10 ⁻⁷ /°C
Physical	Density	4.50g/cm ³

D.G. Lancaster, S. Gross, H. Ebendorff-Heidepriem, K. Kuan, T.M. Monro, M. Ams, A. Fuerbach, M.J. Withford, "Fifty percent internal slope efficiency femtosecond direct-written Tm³⁺:ZBLAN waveguide laser", *Optics Letters* 36, (9), 1587-1589, April 2011.

H. Ebendorff-Heidepriem, T.C. Foo, R.C. Moore, W. Zhang, Y. Li, T.M. Monro, A. Hemming, D.G. Lancaster, "Fluoride glass microstructured optical fiber with large mode area and mid-infrared transmission", *Optics Letters* 33 (23), 2861-2863, November 2008.



Waveguide written in ZBLAN glass in collaboration with MQ Photonics

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