Institute for Photonics & Advanced Sensing (IPAS)

Optofab ANFF

THE UNIVERSITY of ADELAIDE

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ZBLAN Glass

Optofab Adelaide 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 0.3-5µm and high emission efficiency for rare earth ions. Optofab Adelaide can produce undoped or rare-earth doped ZBLAN glass up to 20mL volume (100g) in a wide range of shapes such as small block for spectroscopy and extruded rod for fibre fabrication. 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.

COMPOSITION

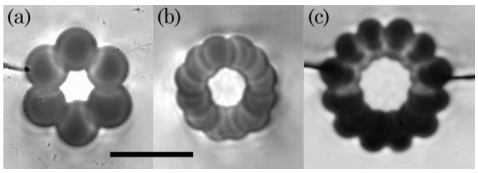
ZBLAN: $53ZrF_4$ - $20BaF_2$ - $4LaF_3$ - $3AlF_3$ - $20NaF$

PROPERTIES		ZBLAN GLASS
Optical	Transmission Range	0.3 ~5.0µm
	Refractive Index (n_{1550nm})	1.49
Thermal	Glass transition temperature (T_g)	265°C
	Thermal expansion (α)	20×10^{-6}/°C
Physical	Density (d)	4.50g/cm^3

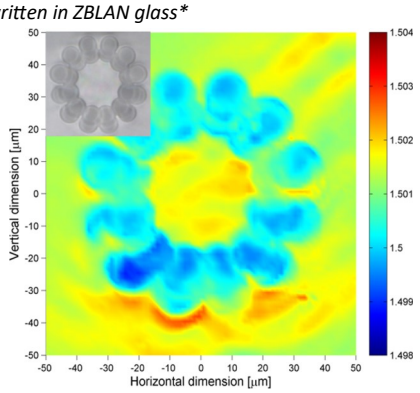
OPTOFAB ADELAIDE

Optofab facilities in Adelaide specialises in optical fibre, glass and functional optical materials production. The range of key services offered include:

- Soft glass fabrication
- Soft and hard glass and polymer preform extrusion
- Soft glass fibre drawing, including microstructured fibres
- Silica fibre drawing, including microstructured fibres
- Glass characterisations (ellipsometer, optical profiler, UV-Vis-NIR spectrophotometer, STA/FTIR)
- Surface functionalisation of glasses and fibres
- DMG DMU-20 Linear Ultrasonic, 5-axis milling machine with ultrasonic milling capability for machining of glass, ceramics and metals
- 3D printing - metals and ceramics
- MicroVu Vertex 312UC LWD Vision System Coordinate Measuring Machine (CMM)



*(a)–(c) Range of waveguide structures fs laser written in ZBLAN glass**



*Absolute refractive index profile at 637nm of WG formed from 24 partially overlapping cylinders direct written at 1 m/min**

*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.

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Professor Heike Ebendorff-Heidepriem
Deputy Director of Optofab Node (ANFF)
heike.ebendorff@adelaide.edu.au

Mr Luis Lima-Marques
Lab Manager
luis.lima-marques@adelaide.edu.au