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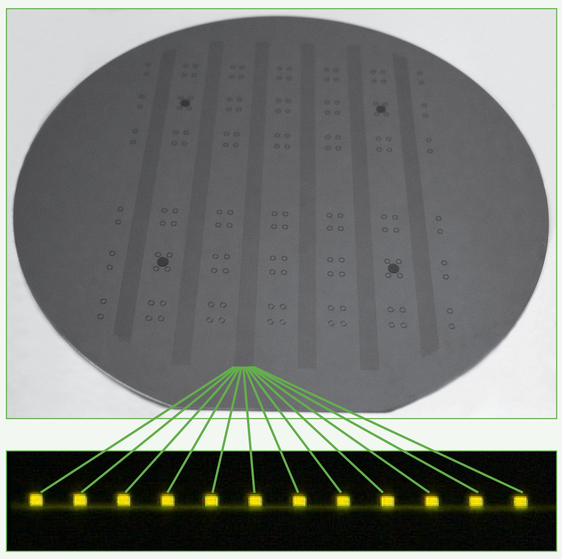
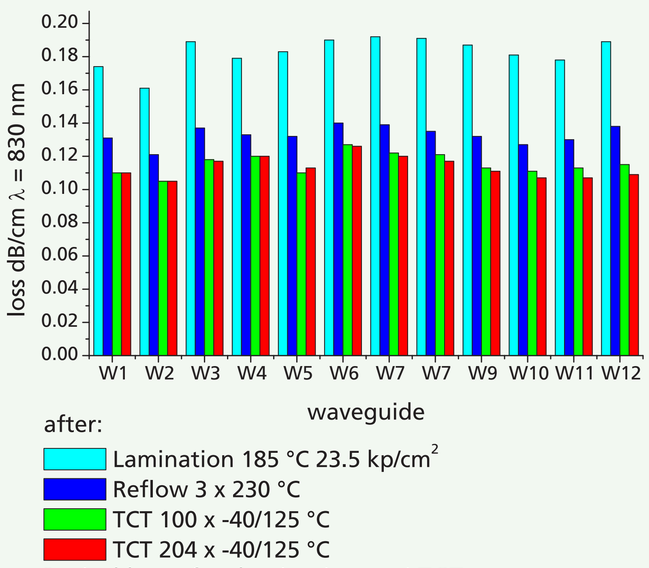
EpoCore & EpoClad - Negative Tone Photoresist Series

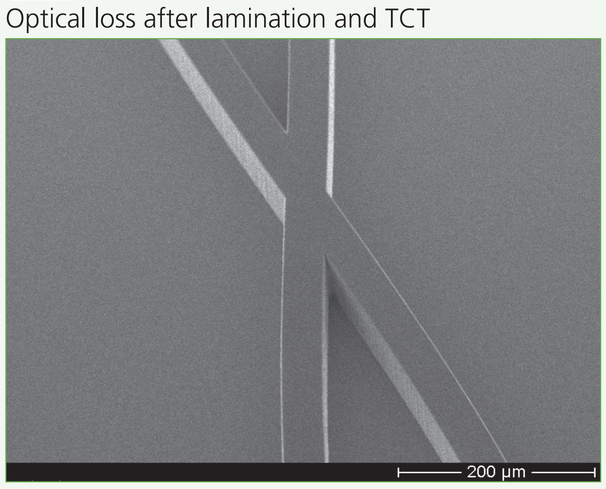
For manufacture of optical single mode (SM) & multi mode (MM) waveguides



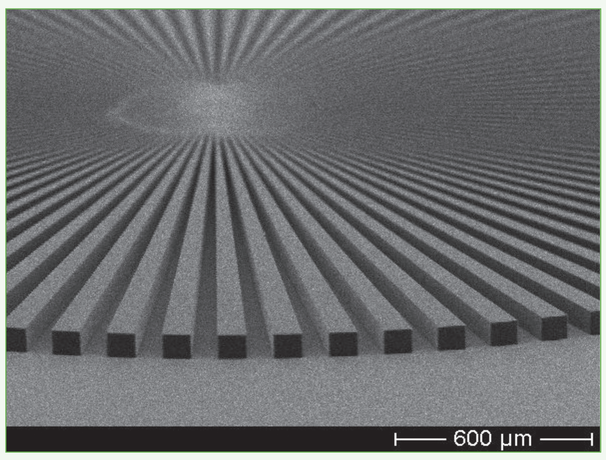
EpoCore/ EpoClad waveguides



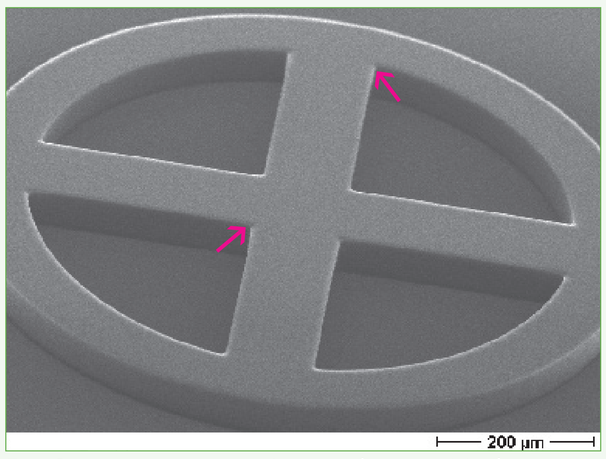
Optical loss after lamination and TCT



40 µm EpoCore structure



40 µm EpoCore, sun structure



EpoCore pattern, no microcracks on critical spots

ls.19.08.02

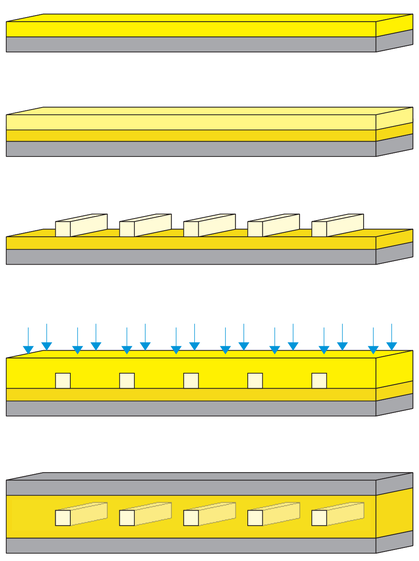
Unique features

- Standard UV lithography & PCB technology processing
- UV patterning of core and cladding
- High transmittance @ 850 nm
- High heat (> 230 °C) and pressure resistance

Applications

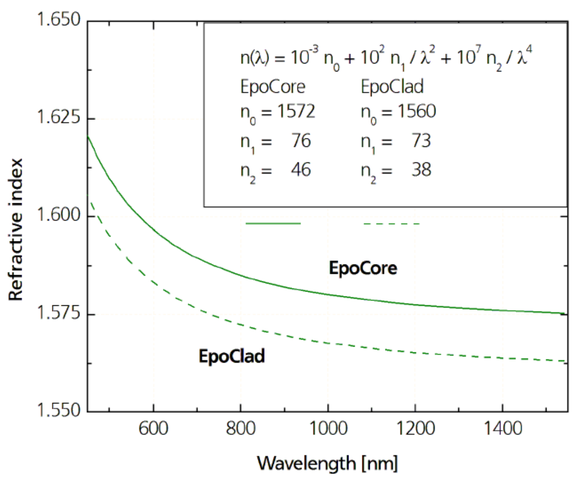
- Optical SM & MM waveguides
- Beam splitters
- Biosensors (multifunctional systems)

Process flow

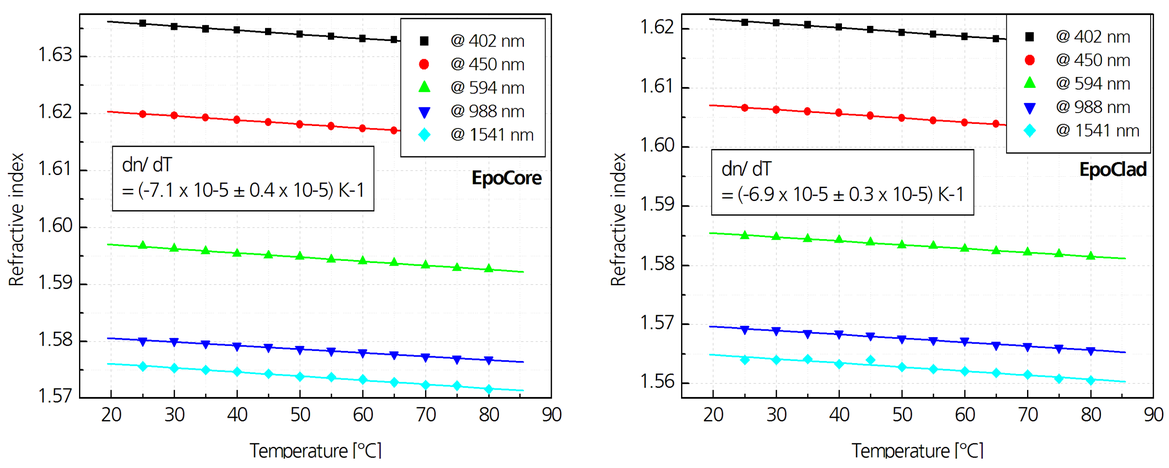


Technical data

Resist	EpoCore	EpoClad
Spectral sensitivity	Broadband, 365 nm	
Ready-to-use solutions for various film thicknesses from 1.5 µm to 120 µm	EpoCore 2 EpoCore 5 EpoCore 10 EpoCore 20 EpoCore 50	EpoClad 2 EpoClad 5 EpoClad 10 EpoClad 20 EpoClad 50
Developer	mr-Dev 600 (solvent based)	
	Properties of cured resist	
Shrinkage	< 3 %	
Thermal stability	up to 230 °C	
Refractive index @ 830 nm	1.58	1.57
Optical loss	~ 0.2 dB/cm @ 850 nm	
Glass transition temperature	> 180 °C	
Excellent stability after lamination	T > 185°C, pressure 23 kp/cm² and reflow tests 3 x 15 s @ 230 C°, TCT: 240 x -40 °C to 120 °C	



Refractive index vs. wavelength



Thermo-optic coefficient dn/ dT of EpoCore and EpoClad