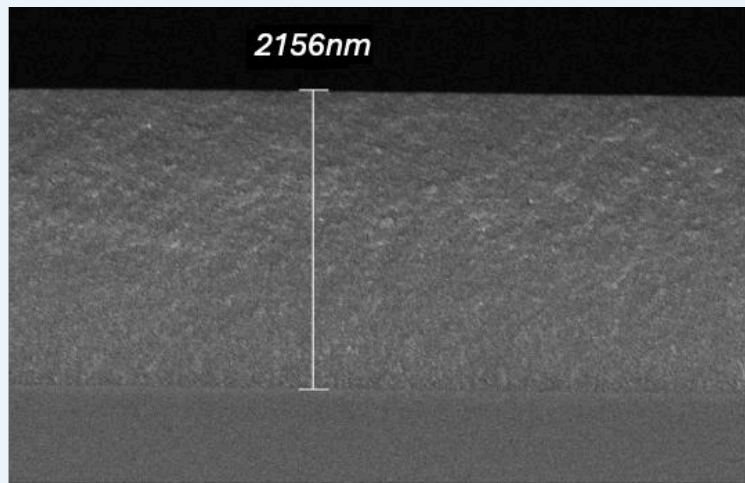
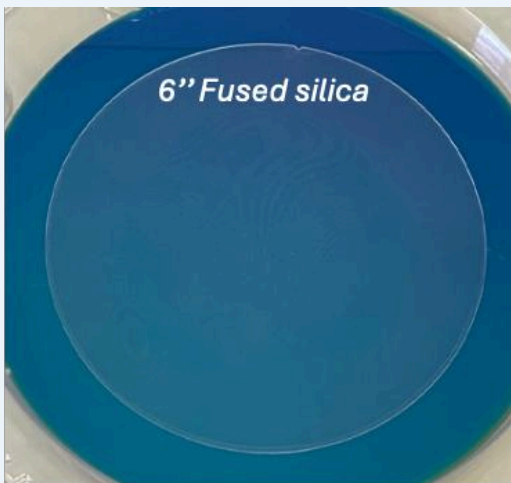


LOW & ULTRA-LOW INDEX MATERIALS FOR OPTICAL COATINGS AND METASURFACE ENCAPSULATION

CHARACTERISTICS:

Thickness	Up to 2500nm \pm 5%
RI@520nm	Down to 1.120 \pm 0.01
Haze	< 0.05%
Absorption	< 0.05% (RGB)
Solution shelves life (6°C)	6 months
Curing	10 min (450°C) or 30 min (300°C)
Young Modulus	~ 2GPa
Water resistance	$\Delta n = 0.001$ RIU (0 – 100% RH)
Processability	SPIN / DIP / NIL / multilayer



The AIR-coat materials can be processed as thin coatings with thickness up to 2500 nm by spin or dip deposition. A thermal budget ranging from 30 min at 300°C to 10 min at 450°C creates a highly homogeneous, robust, water-resistant polymer-free silica (SiO₂) network, exhibiting Refractive Index (RI) down to 1.12 \pm 0.01 (RI index can be adjusted between 1.45 and 1.12 \pm 0.01 if required). The material can be used for high index metasurfaces encapsulation and has a qualified resistance to:

- **THERMAL CHOCK:** 100 cycles -30°C / 60°C
- **HUMIDITY:** 72h in high temperature (85°C) and high humidity (85%)
- **UV:** 1h 306 W/cm² @ 365 nm
- **ADHESION:** tape peeling and dicing resistance