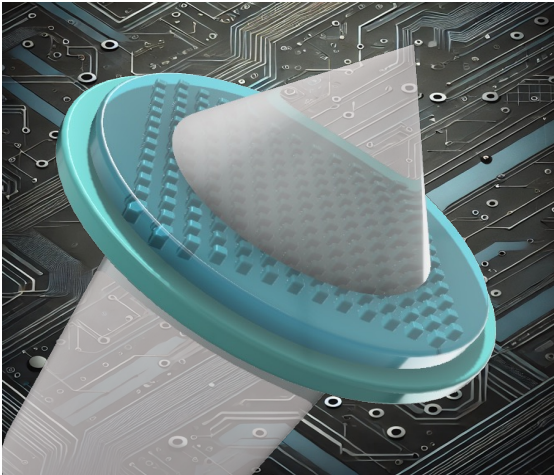
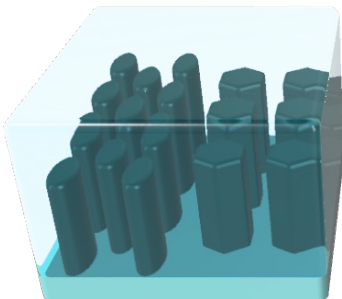


ULTRA HIGH AND LOW REFRACTIVE INDEX MATERIALS FOR META-LENSES



A meta-lens is a flat lens composed of nanostructured meta-atoms that manipulate light at subwavelength scales to achieve focusing and imaging functionalities. Unlike traditional lenses, meta-lenses can control phase, amplitude, and polarization without requiring bulky optics. They enable compact, high-performance optical systems for applications in imaging, sensing, and augmented reality.

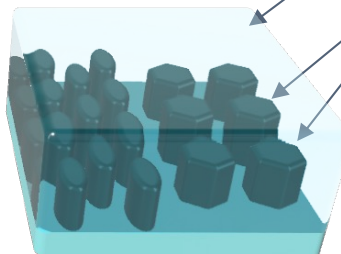
Meta-atoms height
1200 nm



Meta-atoms RI: **2.3**
Encapsulant RI: **1.5**

EASIER PROCESS

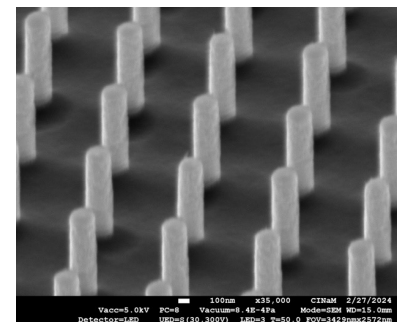
Meta-atoms height
600 nm



Meta-atoms RI: **2.55**
Encapsulant RI: **1.12**

Encapsulant (Low RI)

Meta-atoms (high RI)



SOLNIL resins are developed to prepare meta-atoms with ultra-high refractive index that can be encapsulated within a resin with ultra-low refractive index. This extreme optical contrast enables reducing the height of the meta-atoms by a factor 2 to achieve the same optical performance with much less processing effort.

Materials elaborated by SOLNIL have qualified features:

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