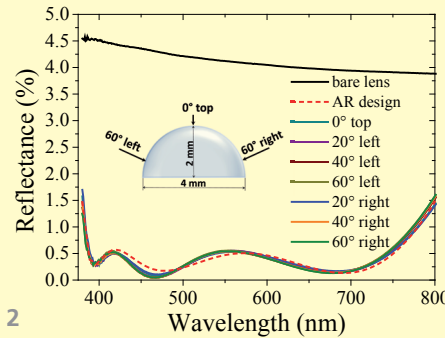
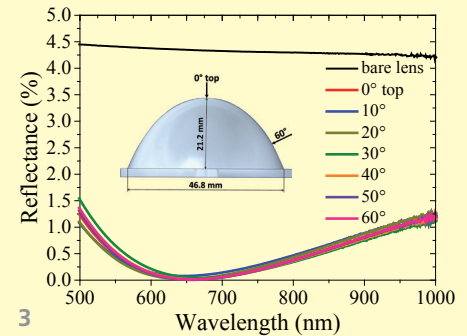


1



2



3

- 1 Design and measured transmittance spectra of broadband antireflection coatings on double-side coated substrate.
- 2 Reflectance spectra of AR-coated half-ball lens, measured at different tilt angles of the lens ($AOI=0^\circ$).
- 3 Reflectance spectra of a lens without coating and coated with a single nanoporous SiO_2 film measured at different tilt angles ($AOI=0^\circ$).

ANTIREFLECTION COATINGS ON COMPLEX SUBSTRATES BY ATOMIC LAYER DEPOSITION

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Motivation

Atomic layer deposition (ALD) is a powerful coating technology that allows conformal coatings on highly curved, micro/ nanostructured, and 3D substrates. Realization of dielectric films with precise control of the thickness and composition is a main advantage of ALD. Upscaling of ALD coatings has already been realized for the semiconductor industry; however, specific requirements for optical thin films must be also fulfilled. Based on our competencies in ALD and optics, we aim to establish ALD in the optical industry with our partners.

Competencies

- Process development for thermal and plasma enhanced ALD thin films

- Development of antireflection coatings (ARC) on complex shaped substrates such as lenses, balls, aspheres, cylinders, microarray lenses, etc.

Our offer

- Deposition of high optical quality oxide layers, such as TiO_2 , HfO_2 , Ta_2O_5 , Al_2O_3 , and SiO_2 with excellent adhesion and high abrasion resistance
- Deposition of tailored nanoporous SiO_2 coatings with precisely controlled refractive index
- Deposition of single layer or broadband ARC for the UV-VIS-NIR spectral range
- Double side deposition on glass substrates
- Characterization and testing of ARC
- Support in technology transfer