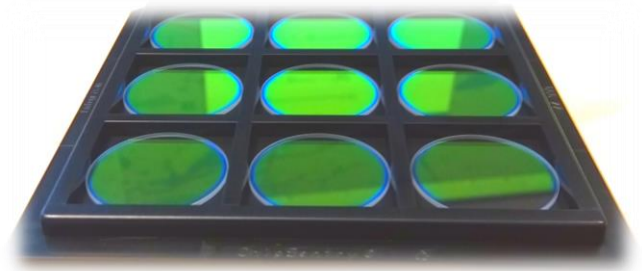




❖ **Optical Coating Solutions & Technology Consultation:**

- Coating Design
- Fabrication
- Process Development
- Consultation

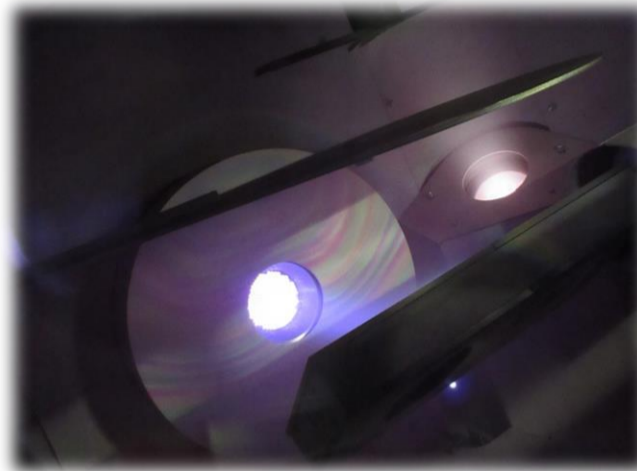


❖ **Optical Coatings:**

- Antireflection
- High reflection
- Pass Filters
- Protection/Passivation

❖ **Benefits of Ion Beam Sputtering:**

- Uniform and dense films.
- Low losses and high optical damage threshold.
- Precise control of the deposition process via ion source parameters and integrated optical monitoring.



❖ **Secondary Ion Source Processes:**

- Pre-cleaning of the sample surface.
  - Ion assisted deposition for e.g. nitrides.
  - Pre- & post-coating surface modification.
- ❖ Available gases: N<sub>2</sub>, O<sub>2</sub>, Ar, H<sub>2</sub>.

❖ **Available Materials Selection:**

❖ **Ion Beam Sputtering:**

TiO<sub>2</sub>, SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, Ta<sub>2</sub>O<sub>5</sub>, AlN<sub>x</sub>, SiN<sub>x</sub>, (TaN<sub>x</sub>, TiN<sub>x</sub>)

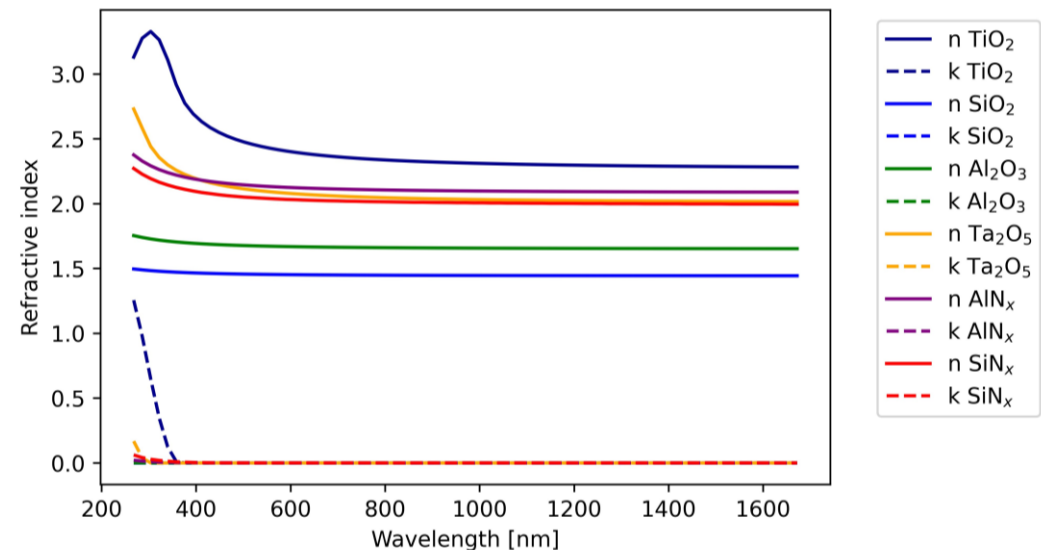
❖ **Electron Beam Evaporation:**

Dielectrics: TiO<sub>2</sub>, SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, Ta<sub>2</sub>O<sub>5</sub>, MgF<sub>2</sub>, SiO, Si, Bi<sub>2</sub>O<sub>3</sub>, ZrO<sub>2</sub>  
Metals: Ag, Al, Au, Cr, Ge, Ni, Pt, Ti

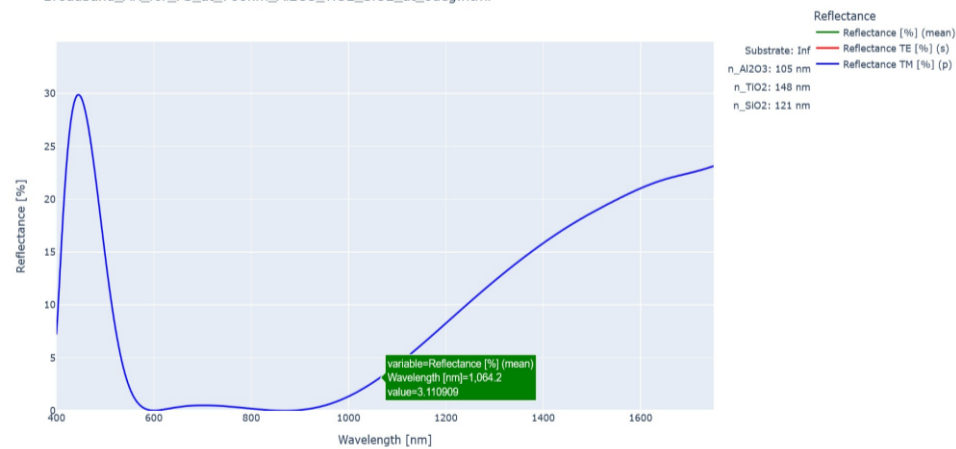
❖ **PECVD:**

SiO<sub>2</sub>, SiN<sub>x</sub>

IBS Materials



Broadband\_AR\_for\_FS\_at\_700nm\_Al2O3\_TiO2\_SiO2\_at\_0deg.html



❖ **Interactive Design Plot for Performance Evaluation:**

- Zoom, scale, or select the polarization you want for the reflectance/transmittance plot of your coating design.
- Custom plots available, if you, for instance, want to have both reflectance and transmittance in the same plot.
- Influence of the substrate backside can be included, so you know what to expect in terms of real-world performance.

❖ **Post-Coating Analysis Service:**

- From the optical monitoring data we can reverse engineer the coating run layer by layer and assess the differences between the provided design and the actual deposited coating.
- We can measure the deposited coatings with spectrophotometer (R%/T%, 200- 2000 nm), atomic force microscope, and scanning electron microscope (surface quality, morphology).

2024-01-24 100nm Al2O3 on 50nm TiO2 on Fused Silica

