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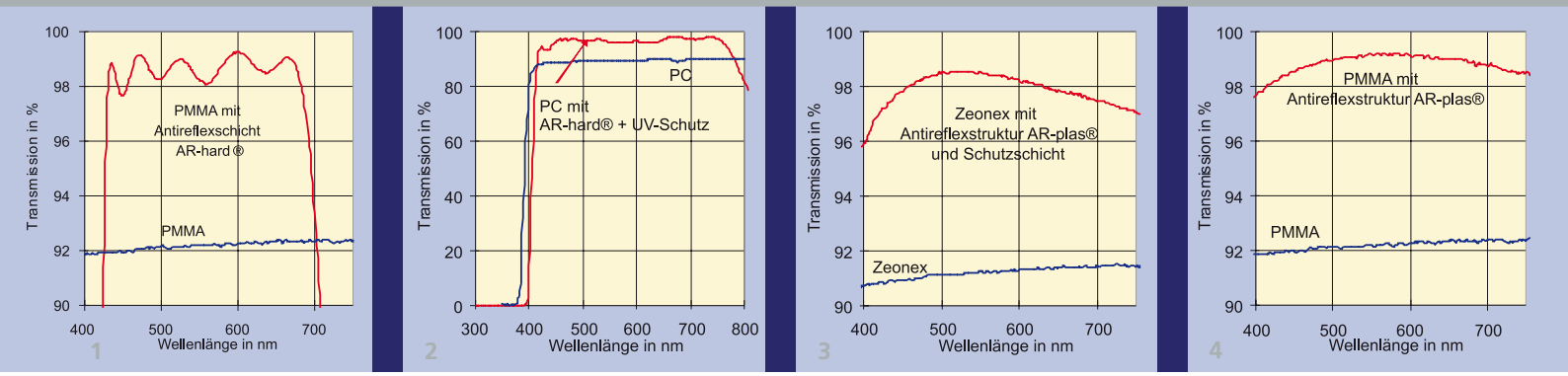

1 *PMMA with coating AR-hard®.*
2 *Polycarbonate with UV-protective AR-hard®-coating.*
3 *ZeonexE48R with AR-plas® nanostructure and 30 nm SiO_2-protective layer.*
4 *PMMA with nanostructure AR-plas®.*

ANTIREFLECTION OF POLYMER OPTICS

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Durable coatings AR-hard®

AR-hard® coatings are especially suitable for plastic optics. The coating design consists typically of thin high index layers and much thicker low index thin layers.
AR-hard® coatings can be deposited by Plasma-ion assisted deposition (Plasma-IAD) and provide beneficial properties:

- Effective colorless antireflection
- Increased light transmission in a defined spectral region
- High scratch resistance, adjustable by thickness
- Environmental stability, typically:
  -40°C to +60°C on PMMA
  -40°C to +85°C on PC
- Additional functionalities like be easy-to-clean and UV protection

The coating can be deposited on PMMA (patented process), Polycarbonate, Zeonex, Polyamide, CR39 and others.

Antireflective nanostructures AR-plas®

Antireflective structures AR-plas® can be produced by plasma etching applying a patented technology. The structure formation occurs self-organized (PMMA, CR39) or can initialized by a thin start layer (i.e. Zeonex). The achieved excellent broadband antireflective effect is working for a broad range of light incidence angles. The process is especially useful for curved or microstructured optical lenses (i.e. Fresnel lenses).
High transmission in the visible spectral range has been demonstrated i.e. for PMMA, Zeonex, Ultrason, PET and CR39.
Antireflective nanostructures are mechanical sensitive. The application is recommended for protected surfaces inside of optical decvices only.