# Designing multilayer optical coatings

Most modern optical coatings consist of a stack of multiple thin layers of (mostly dielectric) different materials. Multiple reflections from the interfaces between the layers interfere with each other in a wavelength dependent way. By properly choosing the thickness and refractive index of the individual layers one can thus produce, for example, anti-reflection coatings, highly reflective coatings, edge filters, etc.

In this project you will set up a model based on matrices that describe reflection and transmission of individual interfaces. The properties of the entire coating stack is then obtained from the product of a sequence of such matrices. You can then use this to design some common optical coatings and calculate their spectral properties.

Contact person: Klaasjan van Druten, n.j.vandruten@uva.nl