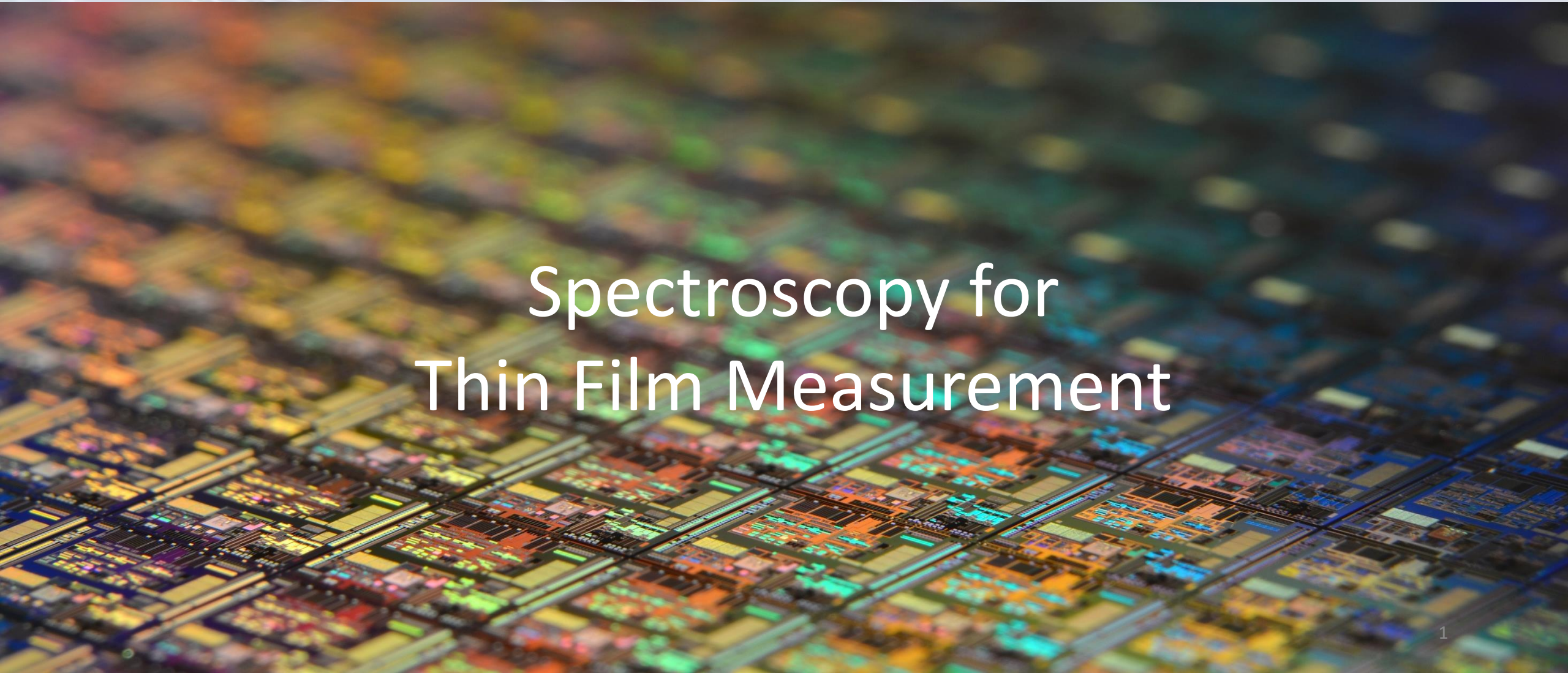


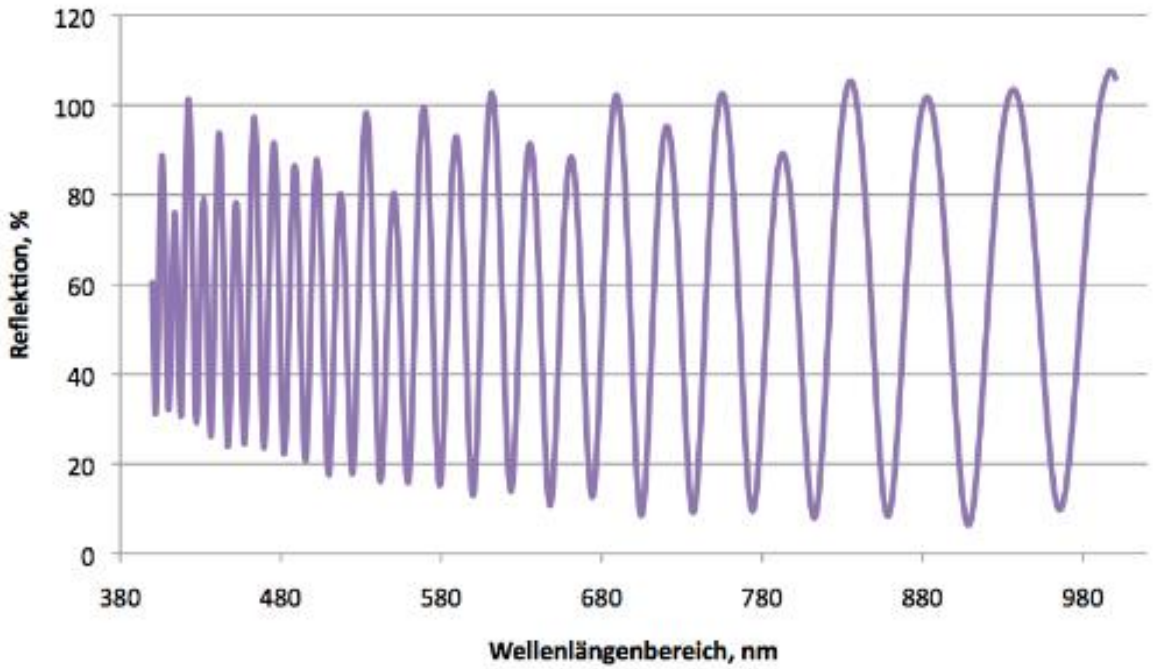
Spectroscopy for Thin Film Measurement

Thin Film Measurement

- The tec5 UV-VIS-NIR wide-range spectrometers are ideal for thin film measurement
- Thin film from 190 nm to 1 µm
- Fast measurement

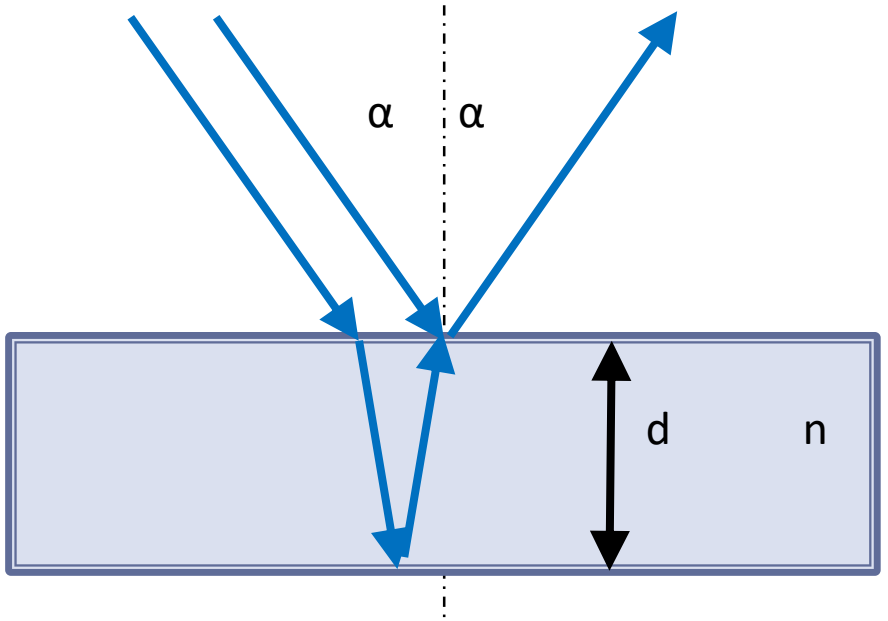
Requriements:

- ✓ High reproducibility
- ✓ High Sensitivity
- ✓ Large Signal/Noise
- ✓ Fast acquistion
- ✓ Synchronized operation



White light interferometry

- Thin film interference
- Fringe spacing used to determine layer thickness
- Multi-layered materials can be measured and optical properties determined via modeling or FFT analysis



CGS UV-VIS-NIR Spectrometer

- High Sensitivity
- High Resolution
- Fast Measurement
- Hamamatsu linear back-thinned CCD, 2048 pixel
- Permanently Calibrated
- SMA fiber connector, 600 µm mono-fiber
- Spectral Range: 190-1000 nm
- Resolution $\Delta\lambda_{FWHM} \approx 2.2 – 2.5$ nm
- Low Stray Light
- Dimensions L x W x H: 78 x 30 x 75 mm

Ideal to be directly integrated into
at-line, on-line and in-line inspection processes

MultiSpec® UV-VIS-NIR System

Cassette-based Design-In Platform

tec5 five USA
Technology for Spectroscopy

- Versatile platform with light source and spectrometer module
- Broadband light sources include halogen, deuterium-halogen, and Xenon flash lamps
- High-performance Zeiss spectrometers
- Permanently wavelength calibrated
- Multiplexer technology
- Various electronic interfaces including PCIe, USB, Ethernet
- Full process-capable communication PCS interfaces including OPC, Profibus, Modbus, and Analog/Digital
- 19“ rack-mount standard/desktop, maintenance free

MultiSpec® system

- Lab testing
- Design-in platform
- Factory acceptance test (FAT)