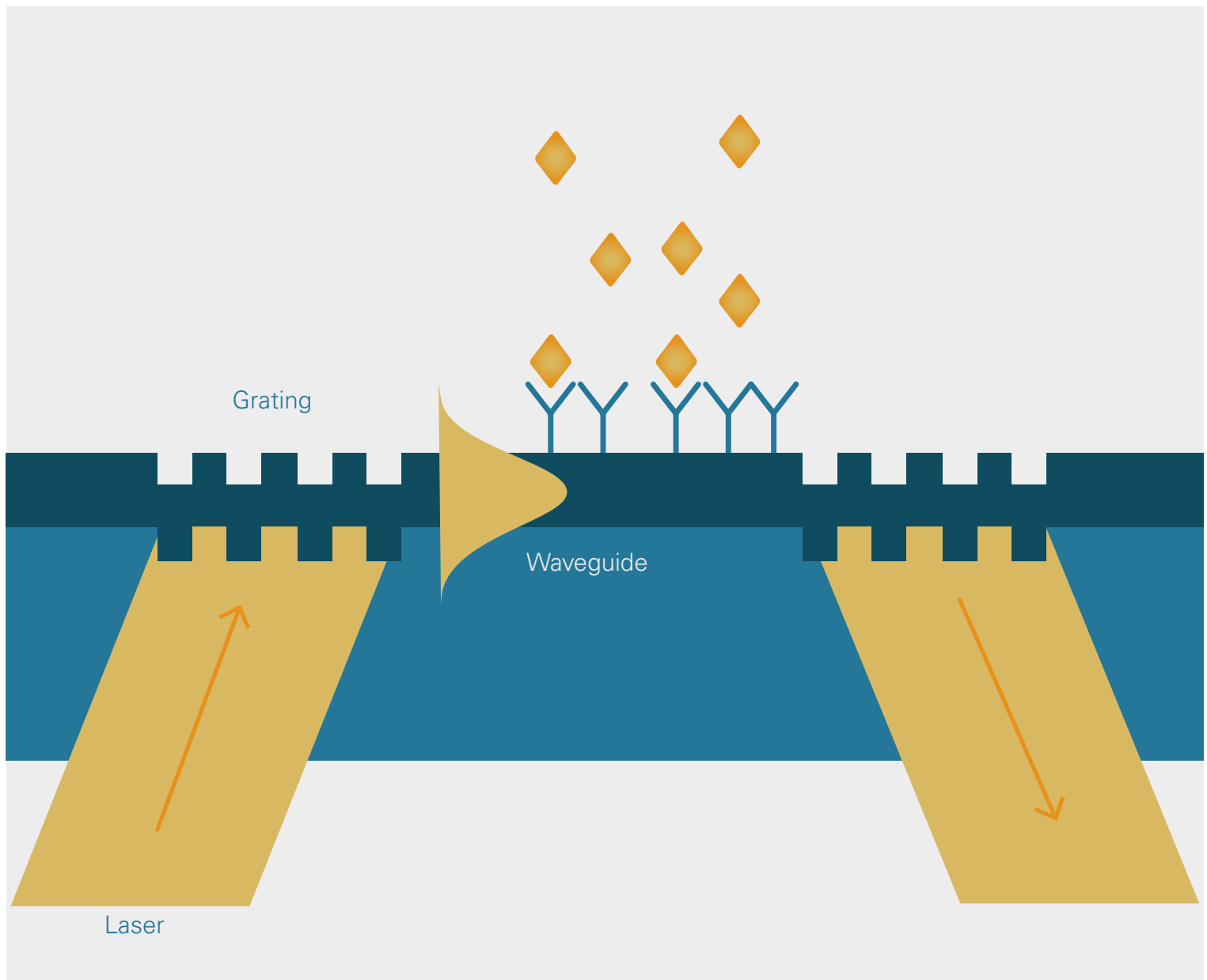
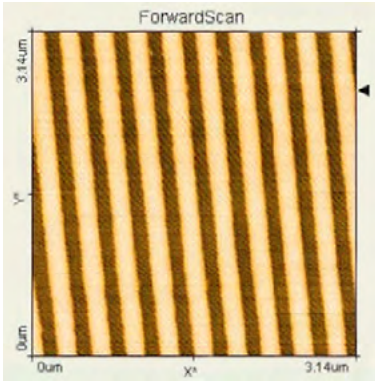


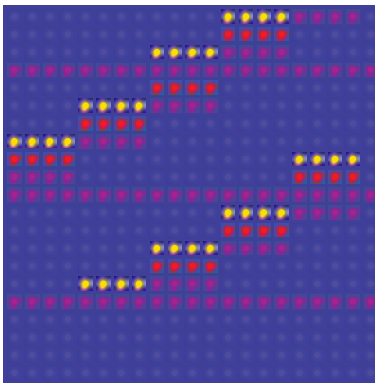
Waveguides with gratings using evanescent field excitation for high-sensitivity sensing platforms

Principle of evanescent field sensing using thin film waveguides with sub-micrometric gratings for light coupling. The small extension of the evanescent field above the waveguide allows very high detection sensitivity.





AFM picture 320 nm grating



Microarray with 100 µm spots
fluorescence detection

Applications

- › Life science sensing applications
- › Analysis of living molecules in real time

Benefits

- › High quality gratings, excellent homogeneity
- › Low defect ratio (also for large chip formats)
- › High repeatability at volume production
- › Competitive up-front costs
- › Combination with fluidic channels

Technical Data

Substrate materials

- › Schott D263T (or equivalent)
- › Refractive index: 1.52 @ 633 nm
- › Dimension: 5" × 5" × 0.7 mm (or thinner)

Waveguide (planar or rib)

- › Material: Ta₂O₅ (or other oxides)
- › Refractive index: 2.12 @ 633 nm
- › Thickness: 100 - 500 nm
- › Attenuation: < 3 dB/cm @ 532 nm

Light coupling grating

- › Binary phase grating
- › Period: 300 - 1000 nm
- › Depth: 10 - 100 nm

About IMT

- › Foundry for optical, electrical and micro-fluidic structures and components
- › Fast prototyping through in-house mask manufacture
- › Staff of 100 employees
- › 1300 m² clean room



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