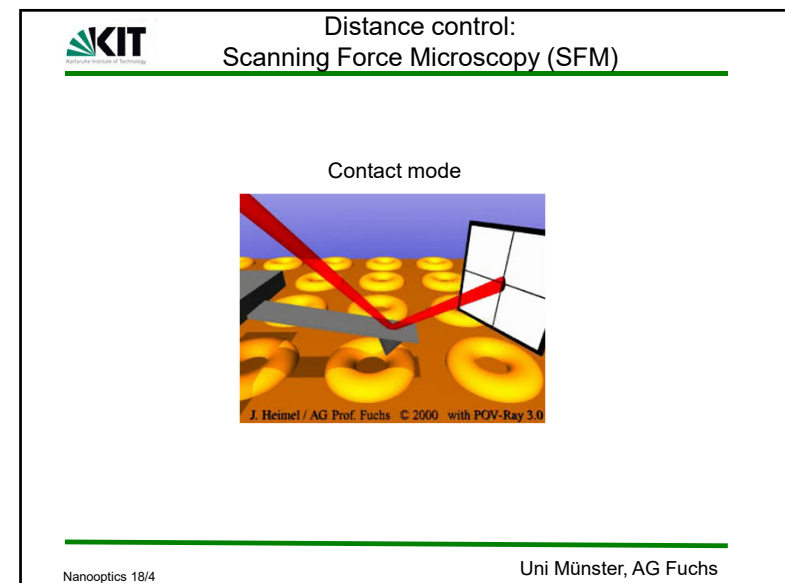
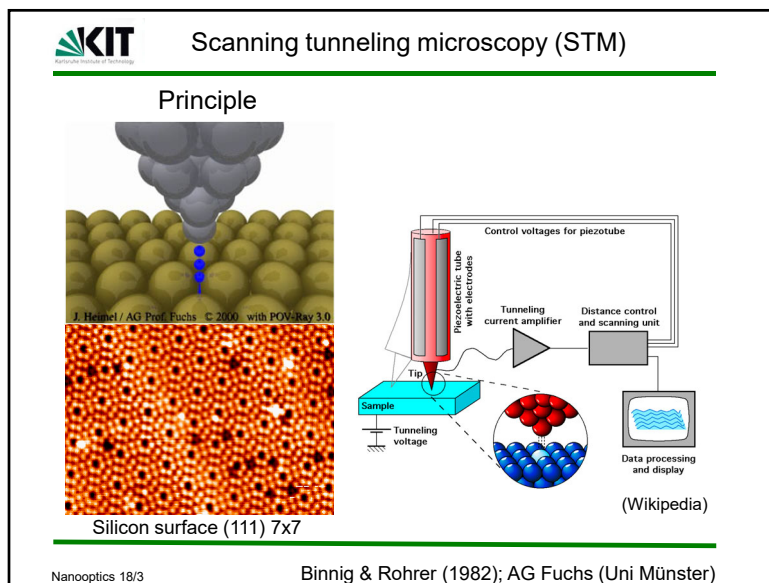
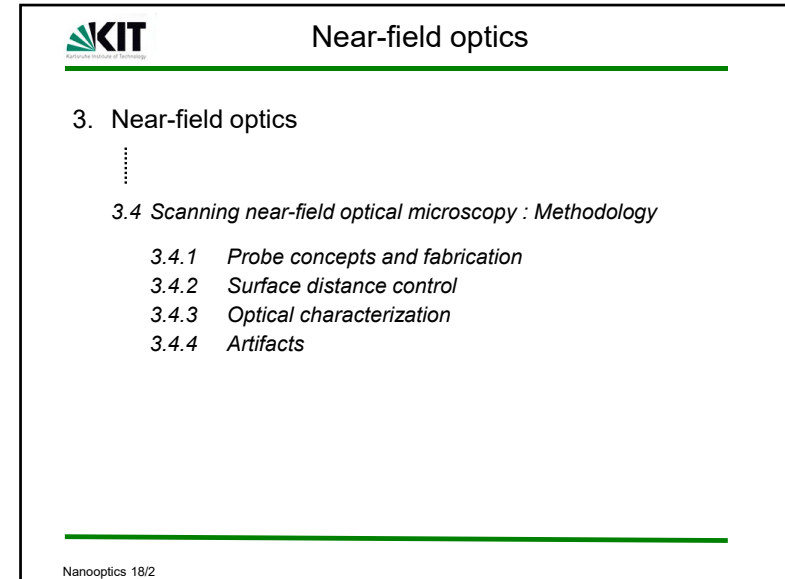
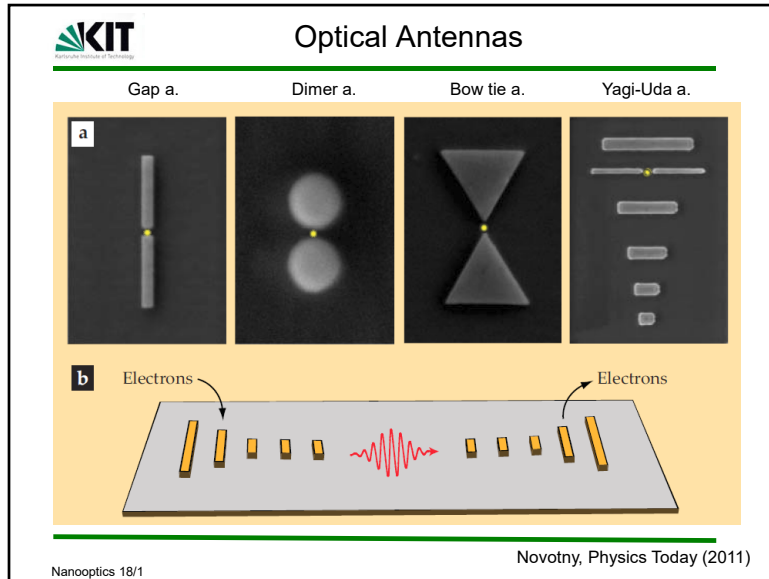
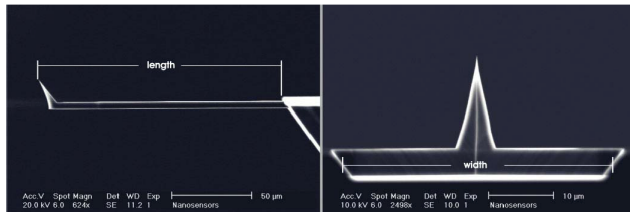
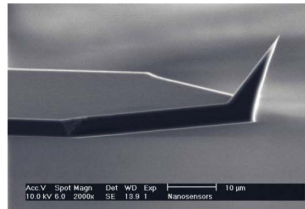


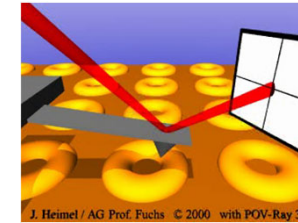


SFM Cantilever

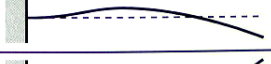
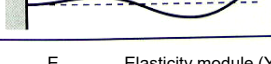


Distance control: Scanning Force Microscopy (SFM)

Non-contact mode oder „Tapping“ mode



Resonance Frequencies of a Beam

n	q_n	α_n	characteristic modes of vibration
1	1.875	0.734	
2	4.694	1.018	
3	7.855	0.999	

$$f_n = \frac{q_n^2}{2\pi L^2} \sqrt{\frac{EI}{\rho S}}$$

E Elasticity module (Young's module)
 I 2nd moment of area
 ρ Mass density
 S Cross-sectional area

cylinder: $f_1 = 0.14 \frac{D}{L^2} \sqrt{\frac{E}{\rho}}$; $f_2 = 6.27 \cdot f_1$

Cantilevered Fiber Probes



