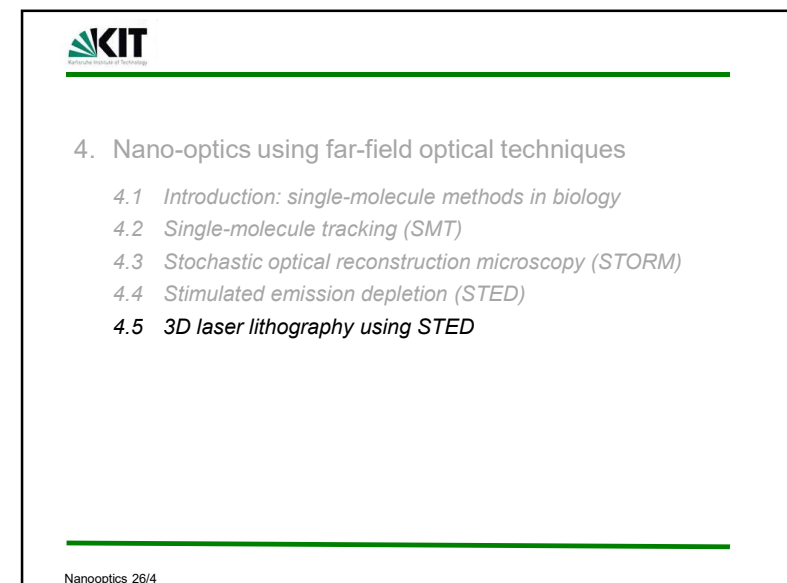
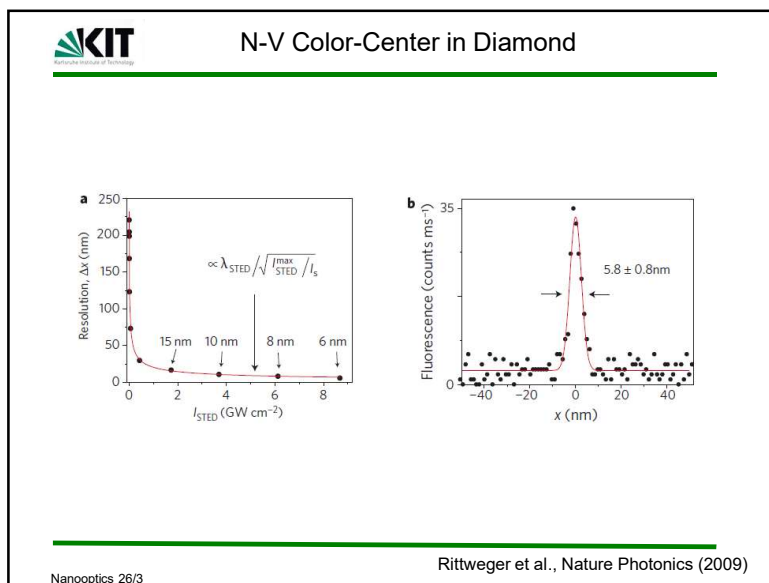
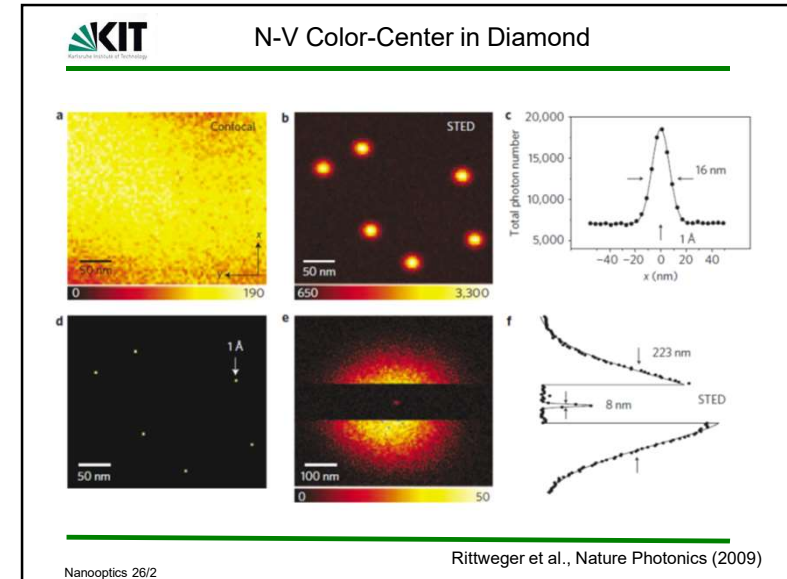
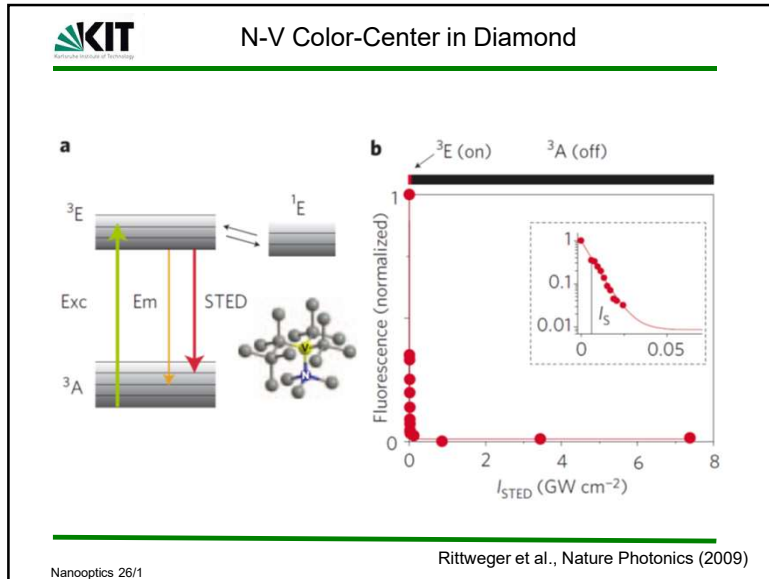




KIT Motivation – 3D Direct Laser Writing

photoresist
glass substrate

laser beam
femtosecond pulses

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KIT Motivation – 3D Direct Laser Writing

Photonic Crystals

Optical Metamaterials

J. K. Gansel *et al.*, Science **325**, 1513 (2009)

M. Thiel *et al.*, Adv. Mat. **21**, 4680 (2009)

Bio Scaffolds

Mechanical Metamaterials

20 μm

F. Klein *et al.*, Adv. Mat. **22**, 868 (2010)

M. Kadic *et al.*, Appl. Phys. Lett. **100**, 191901 (2012)

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KIT Motivation – 3D Direct Laser Writing (DLW)

vectorial calculation
 $\lambda = 810 \text{ nm}$
 $\text{NA} = 1.4$
circular pol.

FWHM 230 nm

(excitation intensity)²

x (nm)

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KIT Motivation – 3D Direct Laser Writing (DLW)

FWHM 230 nm

relevant excitation

polymerization-threshold

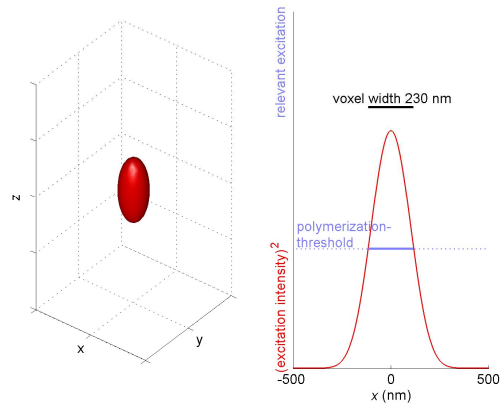
(excitation intensity)²

x (nm)

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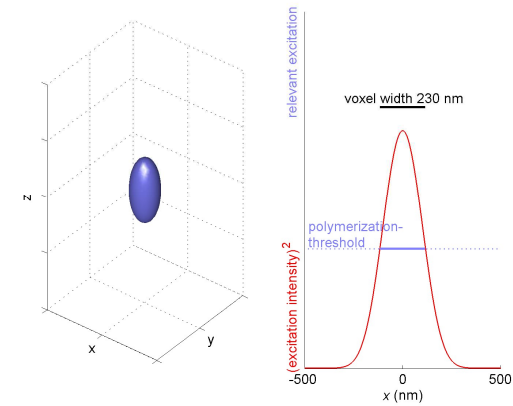
Motivation – 3D Direct Laser Writing (DLW)



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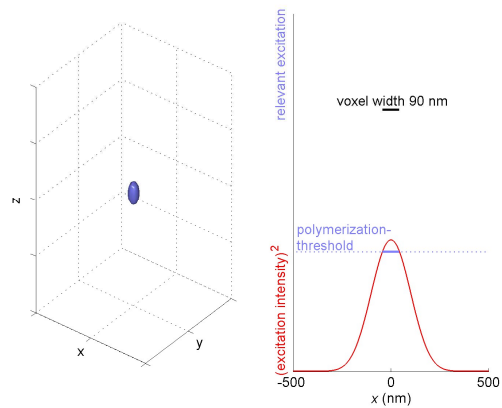
Motivation – 3D Direct Laser Writing (DLW)



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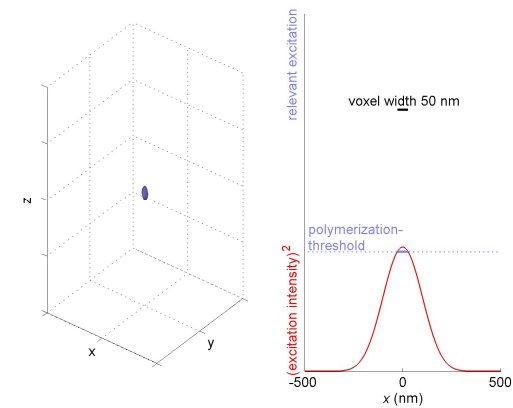
Motivation – 3D Direct Laser Writing (DLW)



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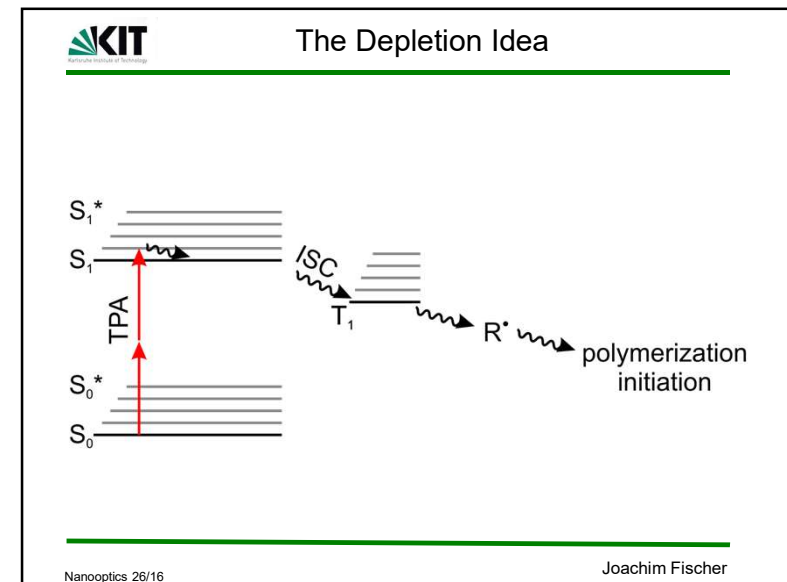
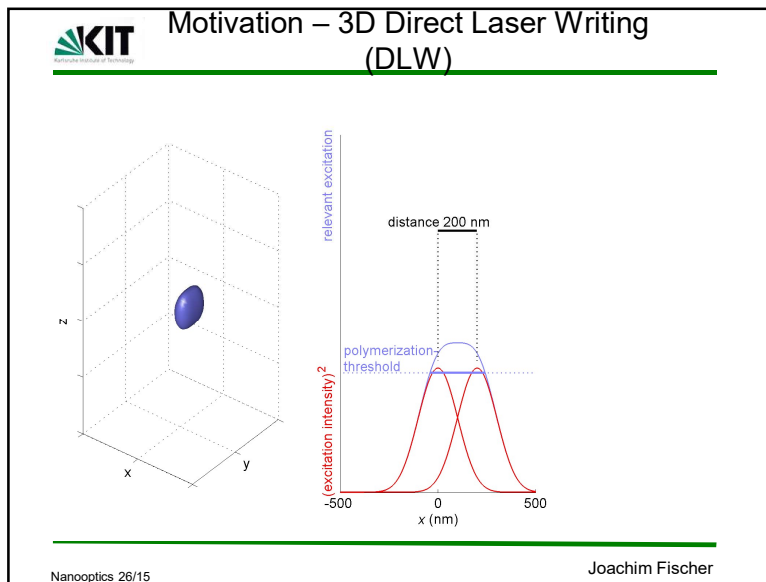
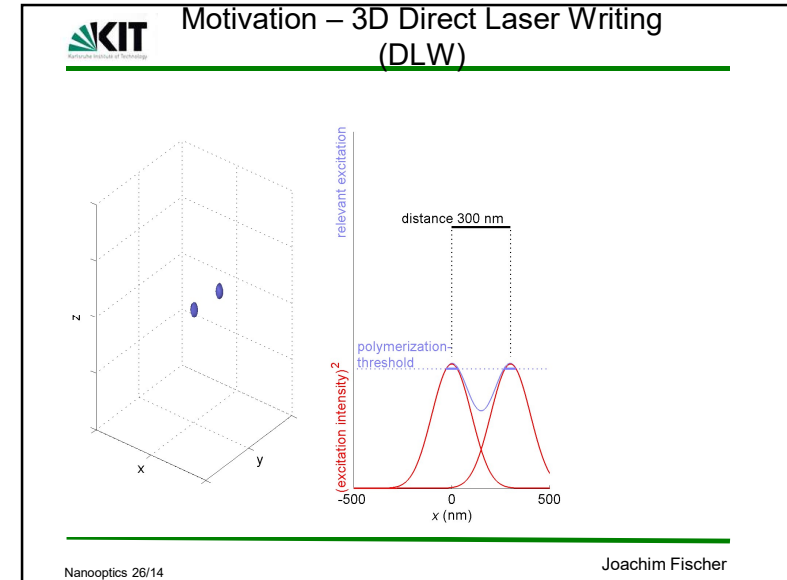
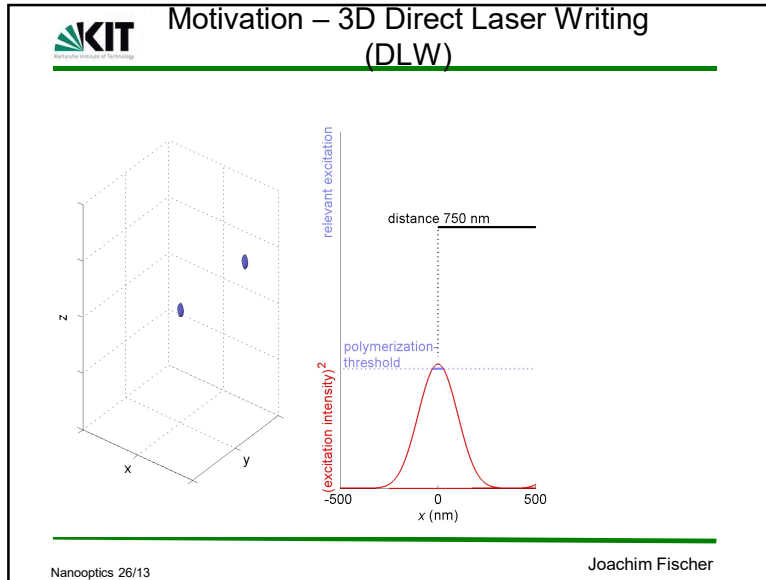
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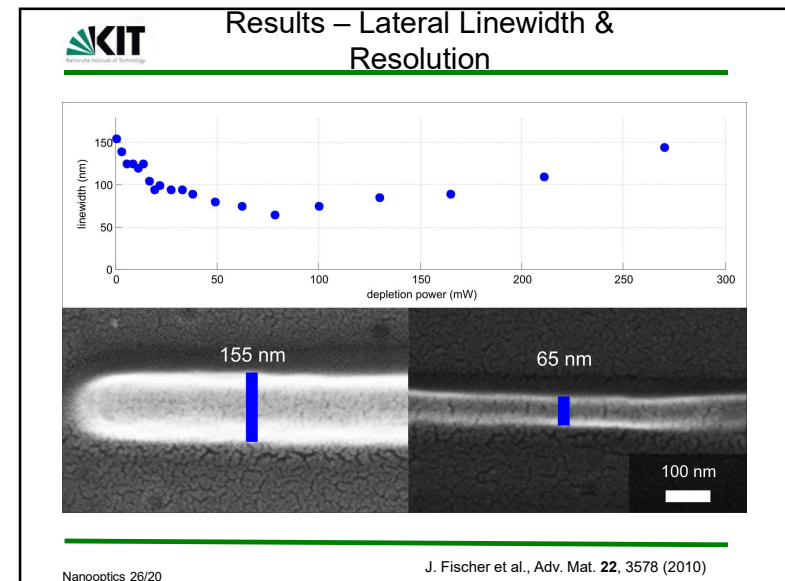
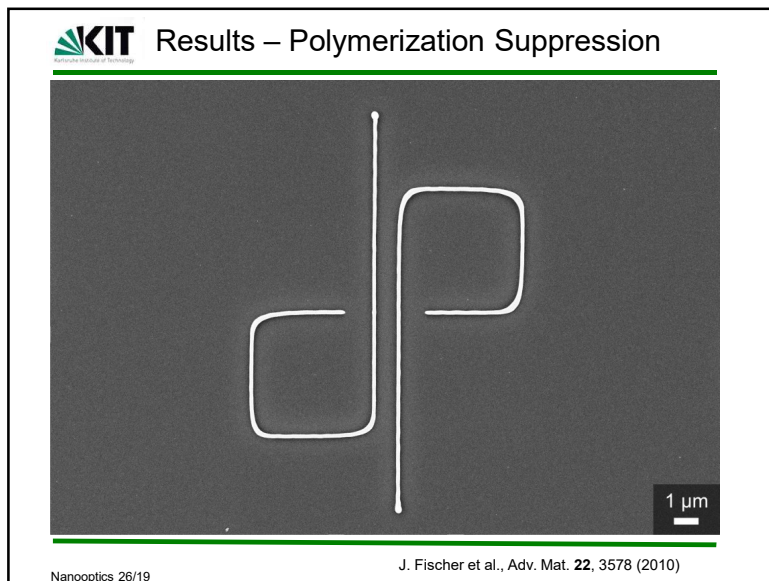
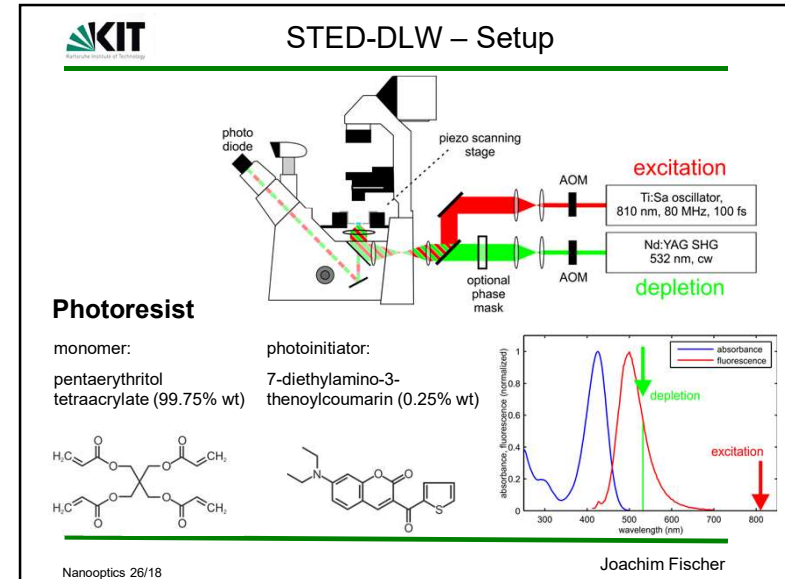
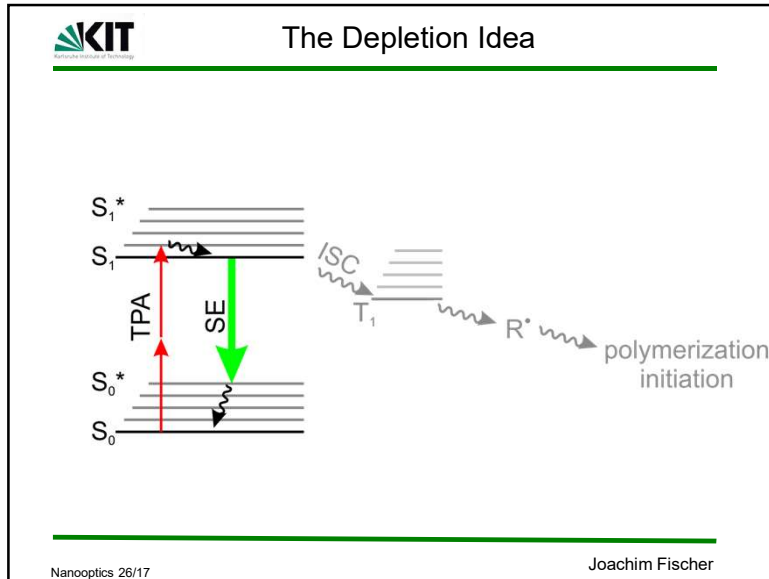
Motivation – 3D Direct Laser Writing (DLW)

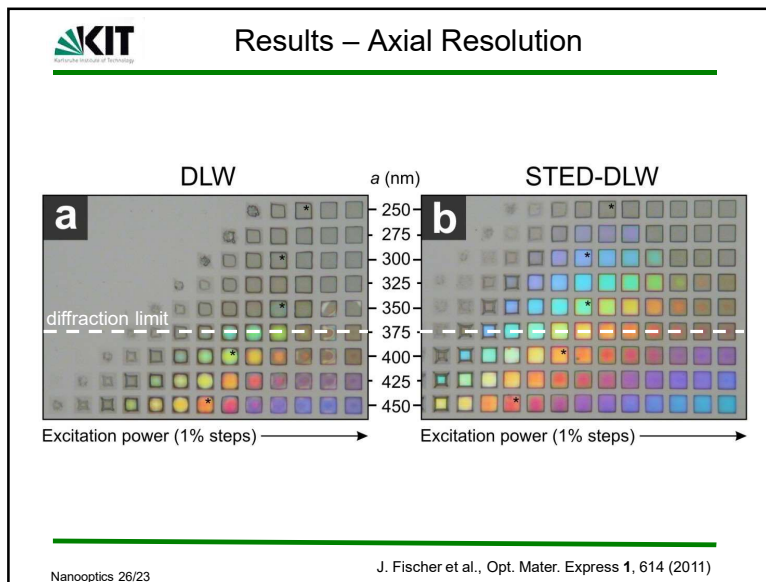
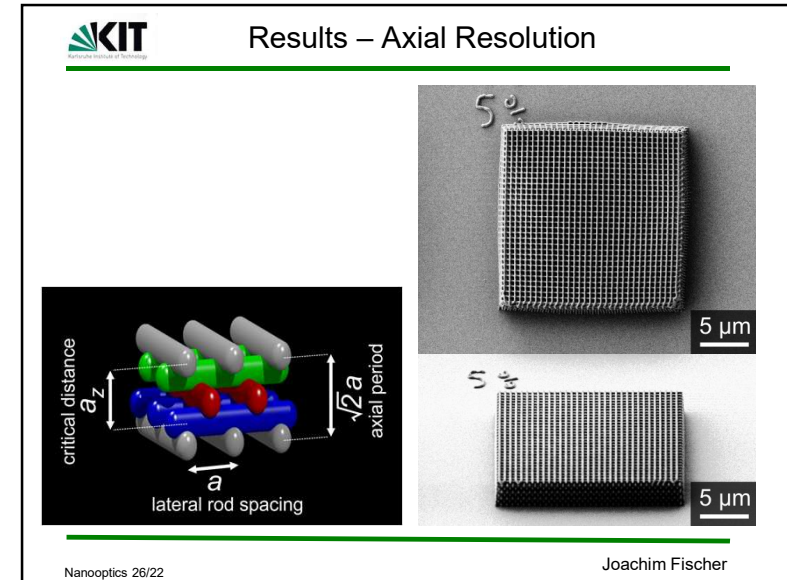
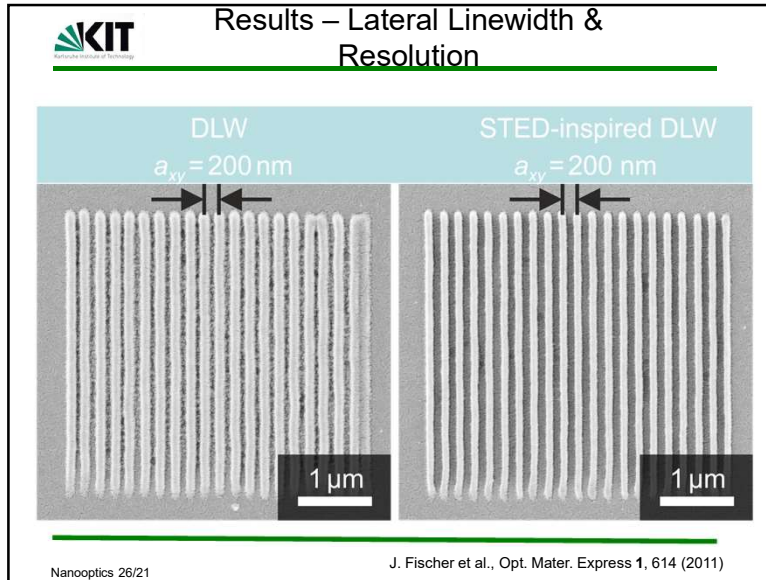


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Joachim Fischer







**Thank you
for your attention
throughout the
entire lecture!**

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Oral Exams

Available dates

- Mo, 06.03.2023
- Mo, 27.03.2023

Please send me an e-mail with your preferences.

E-Mail: naber@kit.edu