

Nanophotonics group in St Andrews: What we do and how to work with us.

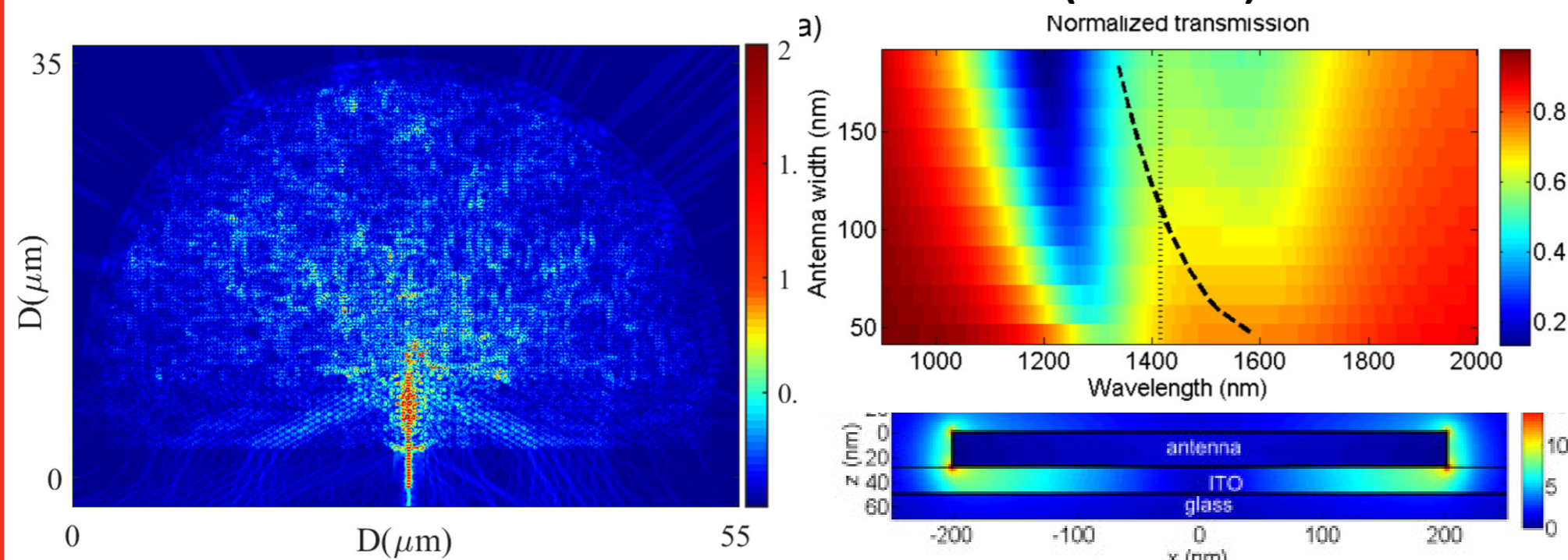
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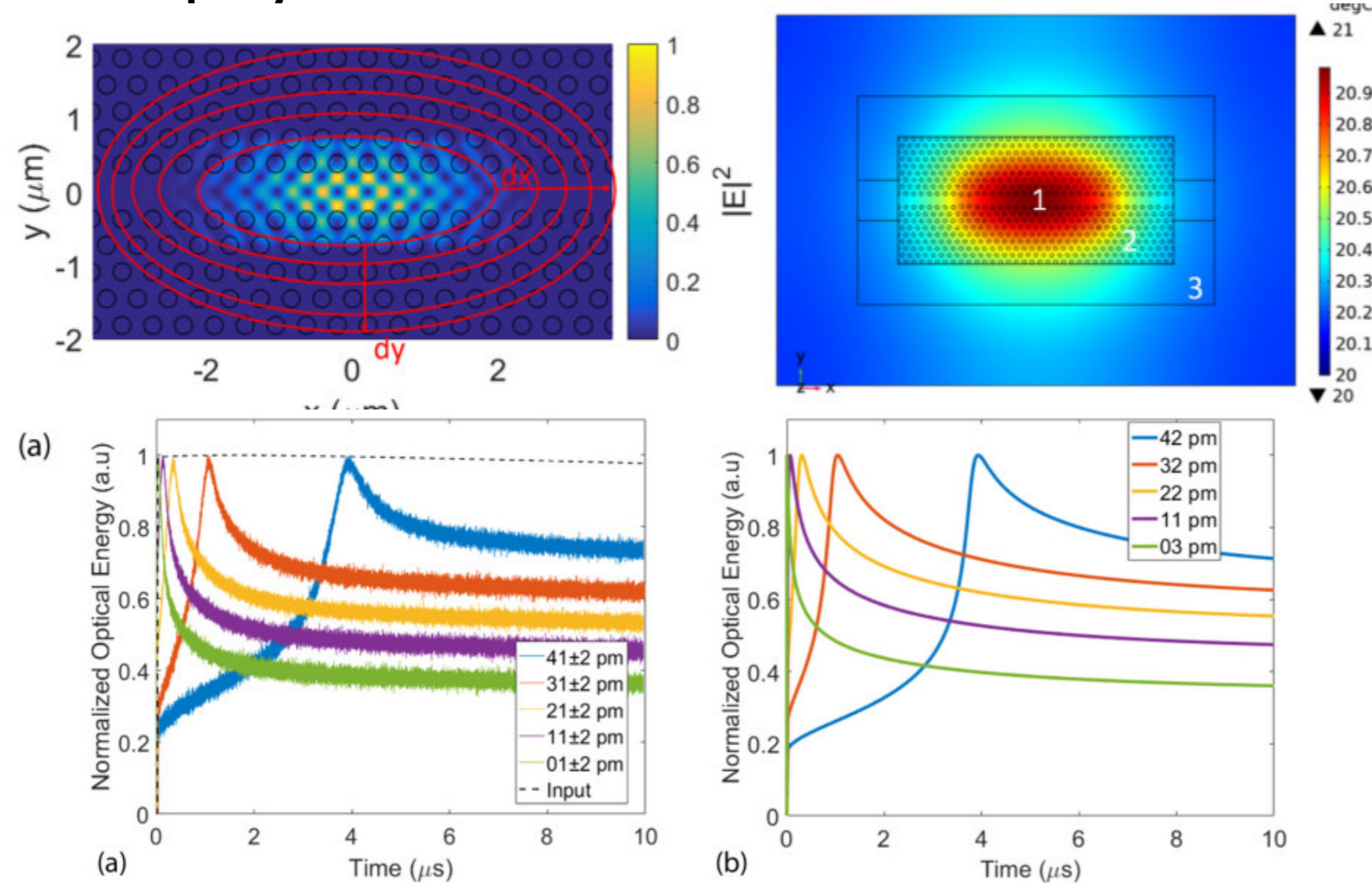
Silicon and Integrated Photonics, Epsilon-near-zero materials, metasurfaces, nonlinear optics and plasmonics (really anything small and interacting with light).

Simulation, Modelling & Design

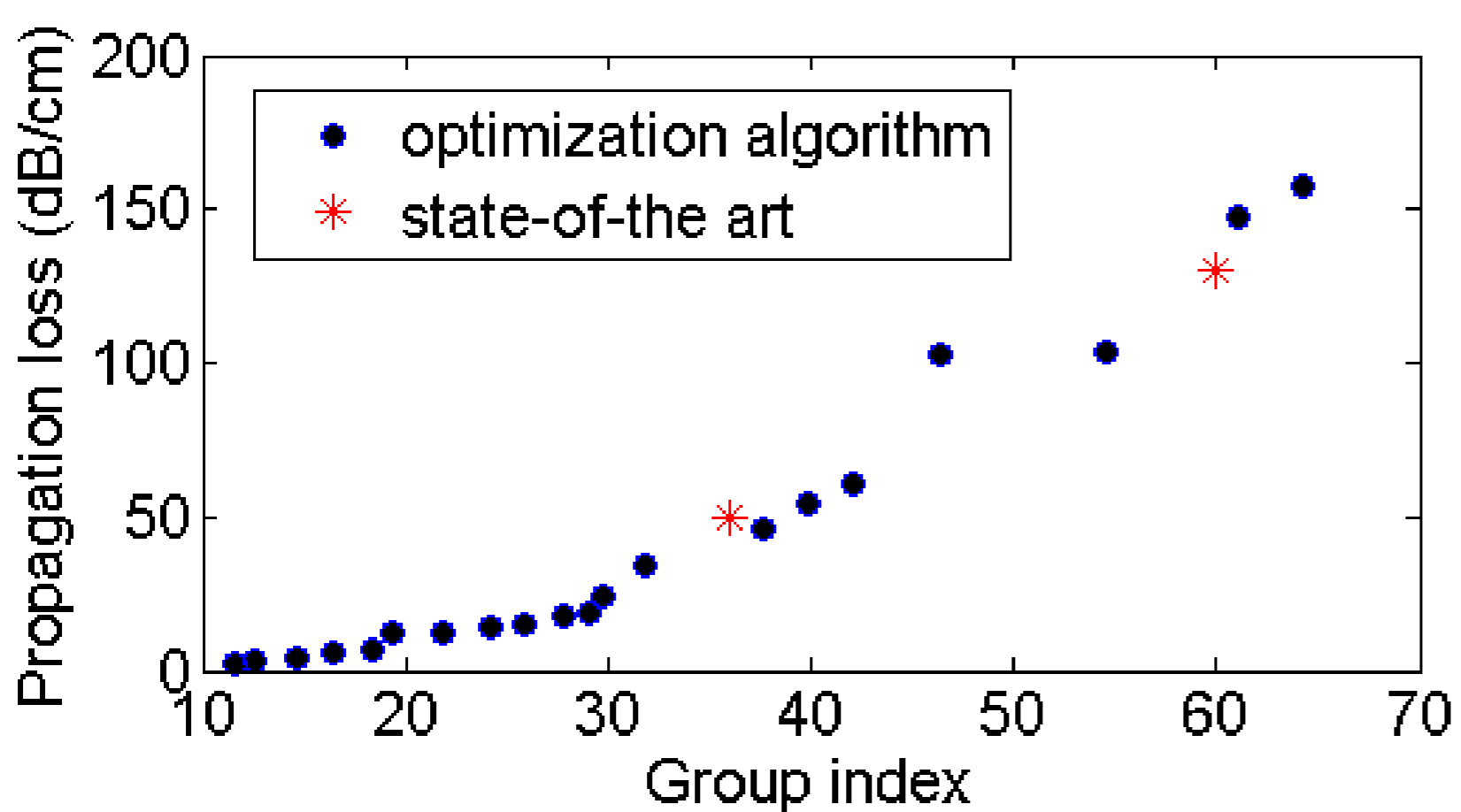
- Finite Difference Time domain (FDTD)



- Approximate and analytical methods
- Multiphysics simulations

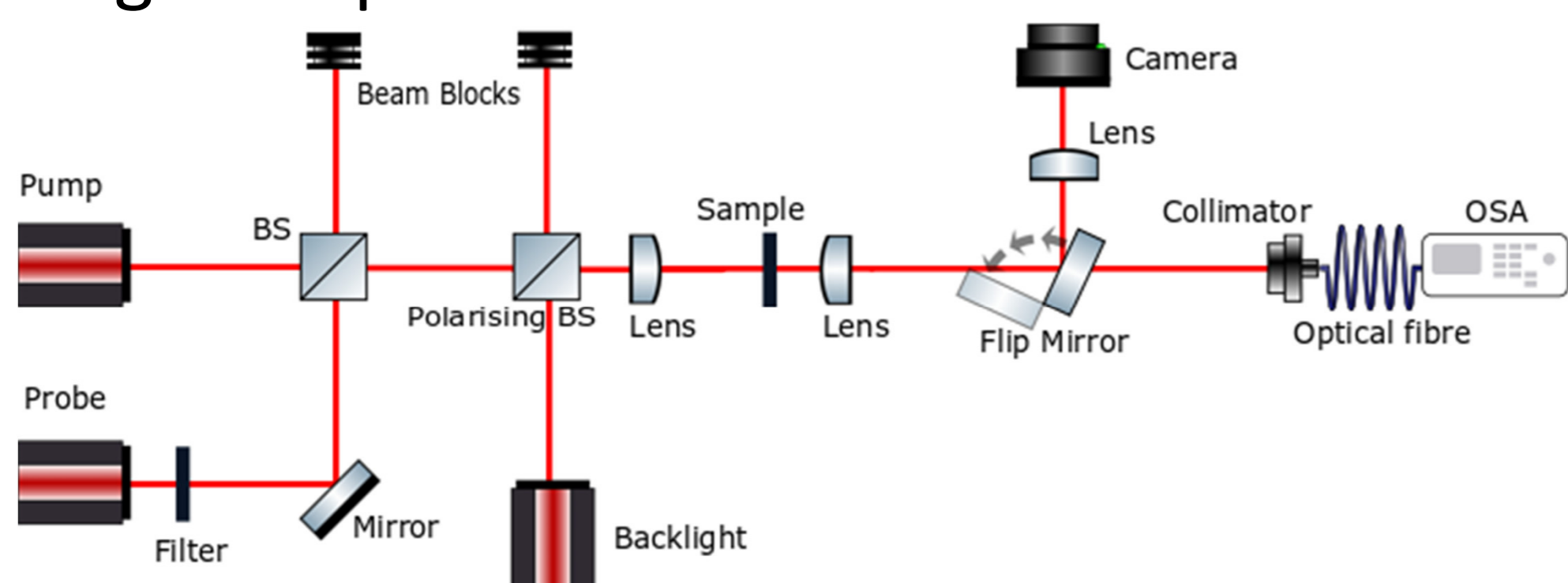


- Advanced design, e.g. optimization, AI



Characterisation:

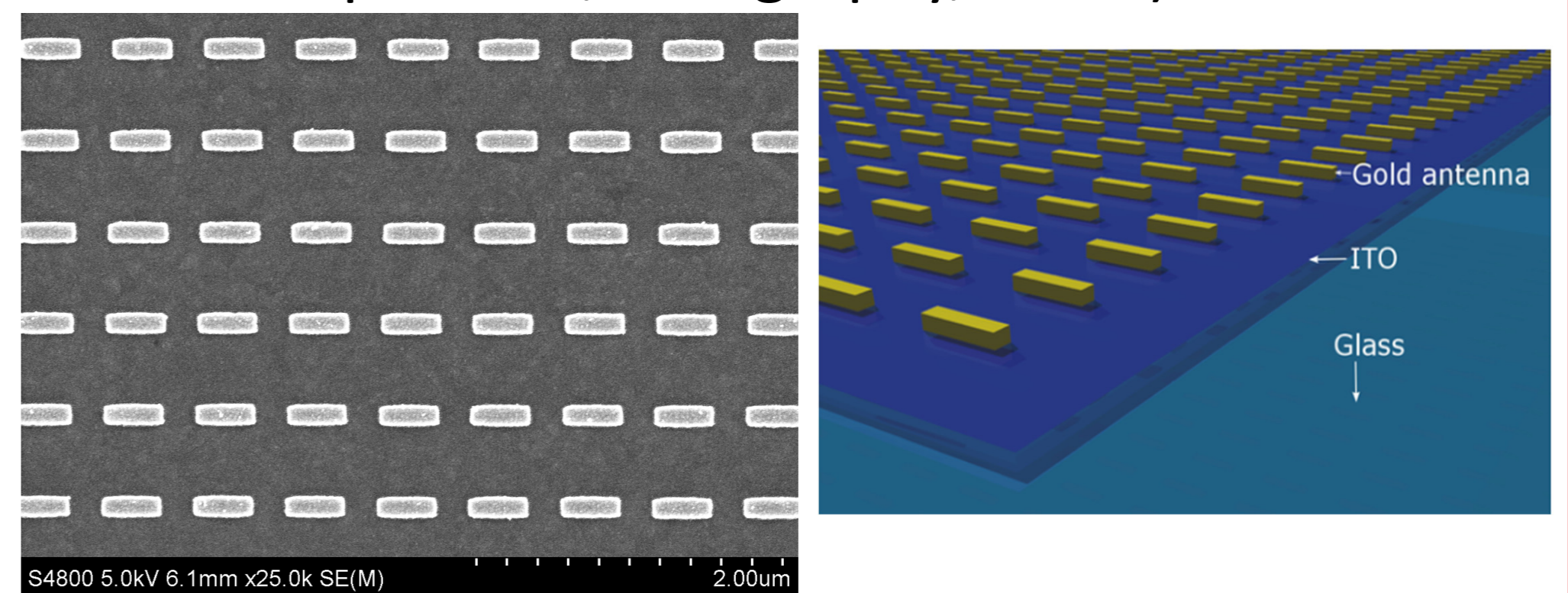
Transmission and reflection, phase and amplitude/intensity in free space and integrated photonics



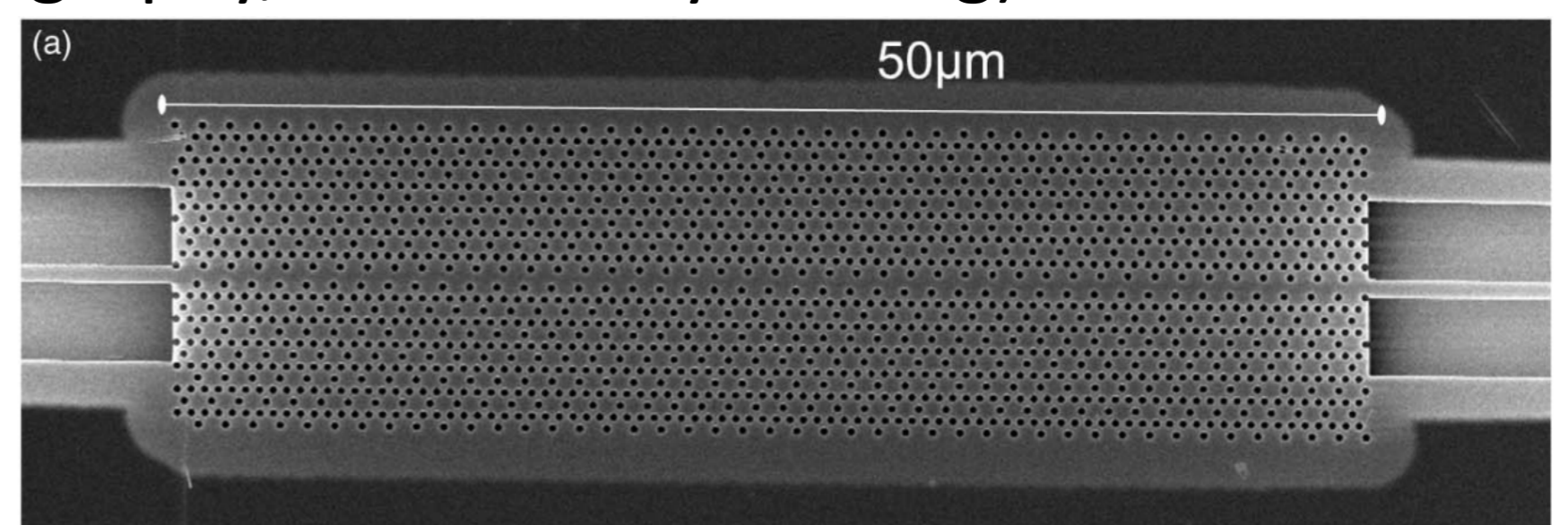
Nanofabrication

Full fabrication capabilities including UV and Electron beam lithography, material deposition and characterisation, dry and wet etching, lift-off procedures.

Example 1: Nonlinear metasurface (all design, material deposition, lithography, liftoff)



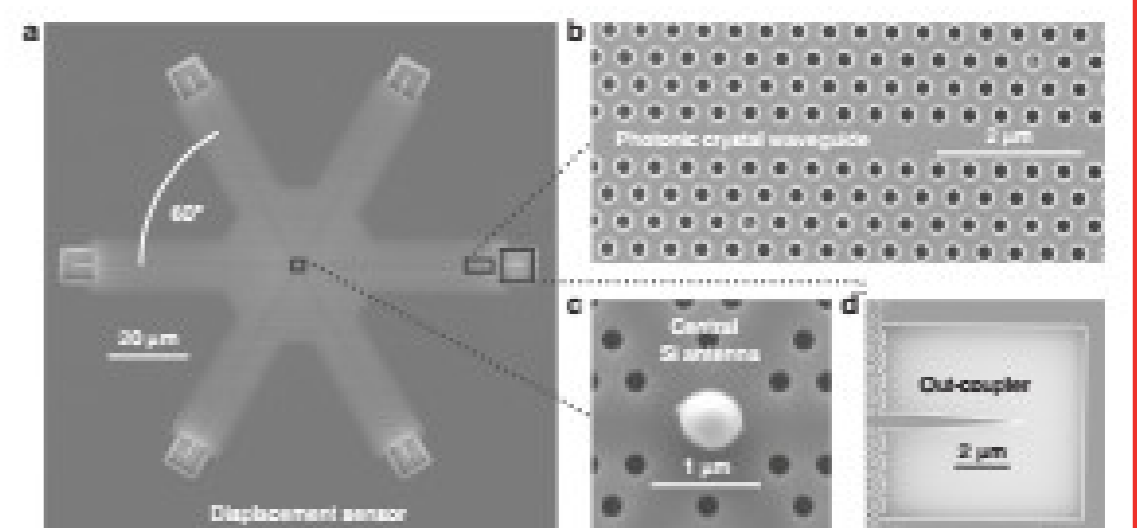
Example 2: Silicon Photonic Crystal (design, lithography, wet and dry etching)



We offer

- High quality results, samples and input.
- Choose one or more from:
 - Modelling/design
 - Fabrication
 - Characterisation
 - Insight

We are happy to drive or support projects.



We look for:

- Device applications
- problems that need solving
- complex characterisation skills
- novel materials
- New design methods and approaches
- New physics
- Short or long term collaborations
- Open to variety of funding schemes

<https://nanophotonics.wp.st-andrews.ac.uk/>