

# QUANTUM OPTICS ON A NONLINEAR CHIP

**Dr. Alexander Solntsev (Univ. of Technology Sydney, Australia)**

## About the lecture:

Quantum entanglement is a special connection between particles, which enables correlations without interaction. Entangling photons, elementary particles of light, brings the promise of secure communication and ultra-fast quantum computing. Another phenomenon called optical nonlinearity allows interaction between electromagnetic waves of different colors. Bringing the concepts of quantum entanglement and optical nonlinearity together, and integrating them on a chip, opens a way to efficient generation of entangled photons and entanglement tuning.

## About the speaker:



Alexander Solntsev has graduated with a double degree in Physics and Education from the Lomonosov Moscow State University in 2009 and received a PhD from the Australian National University in 2013. He then worked as a Postdoctoral Researcher (2013-2015) and a Research Fellow (2016-2017) at the Australian National University until joining the University of Technology Sydney in 2017 to start a new research group. Alexander is working on quantum and nonlinear optics in micro/nanophotonic structures. He is a recipient of the Australian Research Council Discovery Early Career Researcher Award (2018)

**April 20<sup>th</sup> (Fri), 11:30am-1pm @ BRK 2001**

PURDUE UNIVERSITY  
**Discovery Park**

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