

# QUANTUM OPTICS ON A NONLINEAR CHIP

**Prof. 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:



Prof. Alexander Solntsev has graduated from the Lomonosov Moscow State University in 2009 and received his PhD from the Australian National University (ANU), Canberra in 2013. He then worked as a Postdoctoral Researcher (2013-2015) and a Research Fellow (2016-2017) at the ANU until joining the University of Technology Sydney in 2017. He is the recipient of the Dynasty Foundation Award (2008), Nikolai Koroteev Award (2009), John Carver Award (2012), Robert and Helen Crompton Award (2012), Australian Institute of Physics Postgraduate Medal and Postgraduate Excellence Award (2012), Student of the Year at the Australian National University Nonlinear Physics Centre (2013), Early Career Academic Fellowship at the Australian National University House (2017), and Australian Research Council Discovery Early Career Researcher Award (2018).

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