



## Fiber Optics for Optics Communication

377.2.5060

### Presentation demands:

1. Preparation: The frames will be prepared for professional presentation using Beamer frames written in the Latex code.
2. Topic: Topic of the paper has to be relevant to the course. Please email the lecturer the paper of interest for approval or alternatively choose one (for each presenter) of the papers listed below.
3. Duration: The presentation will last at least 20 minutes, but not more than, 35 minutes.
4. Points to consider: a) Literature overview to introduce the research presented in the frames, b) detailed explanation of the theoretical calculations performed in the paper, c) considerations for the design of the device and comparison to similar devices: advantages and disadvantages, d) experimental apparatus and conduction of the experiment, e) application of the device, f) possible future works.
5. Journals: Journals of interest are listed in the syllabus of the course and are repeated here for your convenience.

### Nature Photonics (*Nature Publishing Group – breakthrough*).

1. Seeing through chaos in multimode fibres, *Nature Photonics* 9, 529–535 (2015).
2. Ultrafast fibre lasers, *Nature Photonics* 7, 868–874 (2013).
3. Capacity limits of spatially multiplexed free-space communication, *Nature Photonics* 9, 822–826 (2015).
4. Advances in quantum teleportation, *Nature Photonics* 9, 641–652 (2015).

### Light science and Applications (*Nature Publishing Group – breakthrough*).

1. An all-optical modulator based on a stereo graphene–microfiber structure, *Light: Science & Applications* 4, e360 (2015).
2. Graphene-doped polymer nanofibers for low-threshold nonlinear optical waveguiding, *Light: Science & Applications* 4, e348 (2015).
3. Bismuth-doped optical fibers: a challenging active medium for near-IR lasers and optical amplifiers, *Light: Science & Applications* 1, e12 (2012).

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4. Yb-doped large-pitch fibres: effective single-mode operation based on higher-order mode delocalization, *Light: Science & Applications* 1, e8 (2012).

*IEEE, Journal of Lightwave Technology* (This journal includes regular papers and letters, covering work in all aspects of optical guided-wave science, technology, and engineering).

*IEEE, Journal of Quantum Electronics* (This journal is dedicated to the publication of manuscripts reporting novel experimental or theoretical results in the broad field of the science and technology of quantum electronics.)

1. 'Splice Loss Optimization of a Photonic Bandgap Fiber via a High V-Number Fiber', *Journal of Quantum Electronics* 26(21), 2134 – 2137 (2014).

*OSA, Applied Optics* (Good applied optics Journal)

1. 'Fiber Optics and Optical Communications', *Appl. Opt.* **54**(36), 10606-10612 (2015).

*Phys. Rev. X, Phys. Rev. Lett., Applied Physics Letter* (Good physical Journals)

1. Integrated Source of Spectrally Filtered Correlated Photons for Large-Scale Quantum Photonic Systems, *Phys. Rev. X* 4, 041047 (2014).
2. Fiber Diffraction without Fibers, *Phys. Rev. Lett.* 110, 265505 (2013).
3. Nonlinearity and Disorder in Fiber Arrays, *Phys. Rev. Lett.* 93, 053901 (2004).
4. Polarity Patterns of Stress Fibers, *Phys. Rev. Lett.* 105, 238103 (2010).
5. Nematic droplets on fibers, *Phys. Rev. E* 92, 062507 (2015).

*Optics Letters, Optics Express* (Good optical Journals)