Announcement

**Advanced Seminar: Photonics**
Prof. Ana Predojević

**Description**
We will address some fundamental but also advanced topics relevant for the field of photonics. The focus will be placed on optics and semiconductor physics in service of quantum optics.

**Content**
- Harmonic generation: nonlinearity, birefringence, and periodic poling
- Methods of parametric down-conversion: entanglement
- Methods of parametric down-conversion: squeezed light
- Interferometry with non-classical light
- Testing light: quality vs. quantity
- Quantum dots: structure
- Semiconductor single photon devices
- Quantum dots as photon pair emitters, applications
- Quantum dot as memory
- Photonic crystal cavities
- Storage of quantum light in solid state
- Laser written photonics circuits
- Waveguides
- Superconductors as detectors

**Prerequisites**
Knowledge of Optics, Semiconductor Physics, and/or Quantum Optics

**Literature**
Each topic is backed by a book chapter or research/review paper.

**Additional information**
Seminar (2 hours/week)
4 ECTS credits

**Lecturer**
Prof. Ana Predojević, Institute of Quantum Optics