

**Seminar talk, April 27<sup>th</sup> 2018, building B, room 2.6, at 10 a.m.**

***Ms. Zeynep Atris***

**"Investigations on frequency doubling of diode lasers in non-linear crystals with tilted ferroelectric domains"**

Diode laser sources in the blue-green spectral range are used in many fields of application. Especially in display technology, lasers with narrow bandwidth and sufficiently high coherence length are in great demand. However, the direct-emitting diode lasers in the blue spectral range cannot fulfil the required specifications. Frequency conversion is one solution for this problem. With high power diode lasers with narrow bandwidth in the near-infrared range, frequency doubling via non-linear periodically poled lithium niobate crystals into the blue spectral range can be realized. In this scientific work frequency doubling from the wavelength of 914 nm to 457 nm was investigated. The experiments were carried out with bulk and planar waveguide crystals with tilted poling domains in order to prevent back reflections into the laser, which arise at the domain barriers. If every feedback from the optical system can be avoided, there will be no use for optical isolators in experiments for frequency conversion. This will save costs and space within the experimental setup.