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Setup of an optical Terahertz Spectroscopic System

ABSTRACT - Masterthesis

Although the Terahertz (THz)-frequency range is relatively unexplored, the THz technology has been implemented in numerous fields. In this work, a laser system based on a single laser diode is explored, which can be used for the THz generation. The laser diode is tested in two configurations. In both configurations, the laser diode operates stable on two wavelengths and short-time stable an up to five wavelengths with external optical feedback. The THz wave is generated through difference frequency generation (DFG) process in a second harmonic crystal positioned in the front output beam of the laser diode.