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Design of a Tool for Control and Detection of Optical Power using Python.

ABSTRACT - Masterthesis

In this thesis work, a universal measurement setup for investigation of transmission, attenuation or reflection characteristics of optical components has been established in the lab.

For measurement of components with high attenuation or huge coupling losses a highly sensitive power detection scheme is essential. The designed setup is capable of obtaining stable measurement results, which are not affected by ambient light. This is achieved by modulating the transmitted light and analysing the modulated signal.

The designed setup consists of an optical source and a detector unit which are controlled by using a Multi-IO-DAQ and a computer running the 'SensPD Py tool' designed using Python. The setup is tested in the absence and presence of ambient light. The results are discussed and the minimum detectable optical power in each case is presented.