Faculty of Electrical Engineering & Computer Science
Master Degree Course Electronics Engineering, MSc EE

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Development of LED Characterizing Goniometer.

ABSTRACT - Masterthesis

In this thesis, the main task is to use the automatic measurement procedure for the precise measurement of light intensity distribution curve and spectrum of LED devices using Raspberry pi. For this, a Goniometry setup could be designed.

A stepper motor is used for rotations of LED and reading values from different angles. For measurement procedure, a LED could be fixed on axis of the stepper motor using a plate, which rotates in clockwise and anticlockwise direction.

At one side of stepper motor, a light sensor could be used for reading the luminous flux of the LED under test. In this process, the LED could be measured 200 times from 0° to 180° angle position with the gap of 0.9° angle between every reading angle. Using these reading values, a light intensity angular distribution curve could be plotted.

For the spectral reading, the optical fiber cable is positioned at the opposite side of the light sensor. After the reading procedure of light sensor is done, the spectral reading will be done with the same concept as for light sensor i.e. with the step angle of 0.9°, the 3D-graph for spectral measurement could be plotted.