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**Spectral Investigations on Semiconductor Lasers.**

*ABSTRACT - Masterthesis*

In optical communications and optical sensors semiconductor sources like LED's and laser diodes are employed. The spectral characteristics of the respective optical sources are of vital importance regarding RIN and chromatic dispersion in fiber optic systems. LED's and lasers differ in their spectral emission due to different processes of light generation and due to their structures and engineering implementations. Spectral investigations are carried out with experimental equipment like grating monochromator's and Fabry Perot interferometers having a variety of dynamic range, free spectral range and spectral resolution.