OTTO VON GUERICKE UNIVERSITÄT MAGDEBURG
VST FAKULTÄT FÜR VERFAHRENS- UND SYSTEMTECHNIK

INSTITUT FÜR STRÖMUNGSTECHNIK UND THERMODYNAMIK

Prof. Dr.-Ing. Frank Beyrau

Task for final thesis / HiWi activity

Thermographic investigations of plastic samples with phosphor percentage

The Chair of Technical Thermodynamics is developing a new temperature measurement method that allows precise and spatially resolved wall temperatures of components in a water bath to be determined. The developed measuring method is used in the optimization of cooling sections, such as those required for extruded plastic components. The determined wall temperatures are used to quantify the heat transfer, which reduces the CO2 footprint for such components.

As part of your work, the measurement method is validated by investigating plastic samples to which the phosphorescent materials YAG:Cr and MFG:Mn have been added. The subject of the research is the photoluminescent properties, which are analyzed using optical test setups for different temperatures and under different conditions.

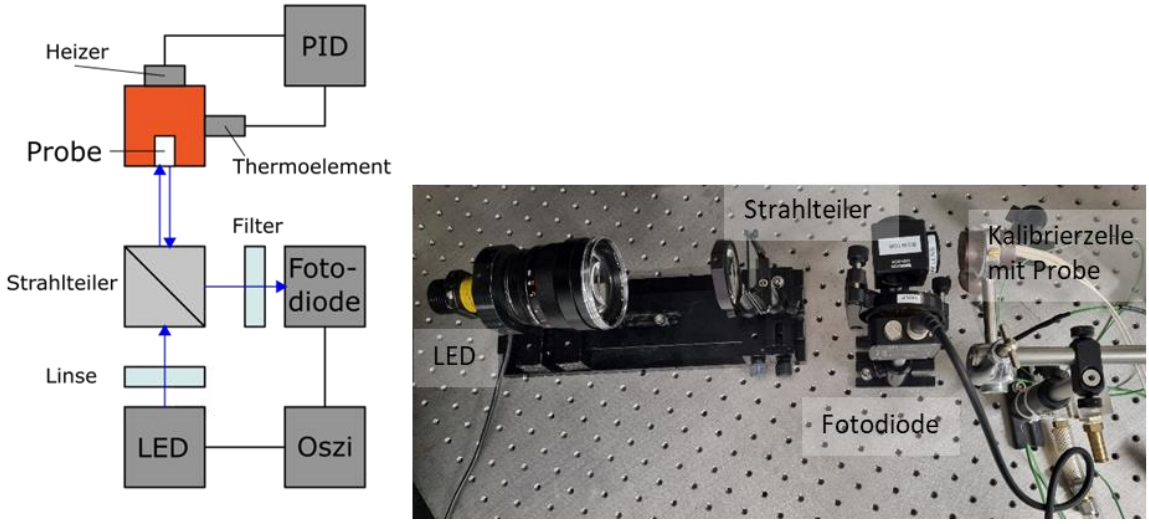

Figure 1: Exemplary setup of a phosphor thermographic investigation

As part of your job, we offer you comprehensive training in optical temperature measurement methods as well as the opportunity to work independently and autonomously in the laboratory. You will also be able to work on an exciting topic from the field of applied research with direct practical relevance.

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