



## Master Thesis

### *Creation of educed Order Thermal LED Models*

#### Summary

The thermal properties of an LED are critical for performance and especially long-term reliability. The influence of design parameters like solder pad size, pad shape and the dimension of the carrier of the light emitting die are therefore of great interest. The state-of-the-art to determine the thermal properties of a potential design is a Finite Element Simulation. However, to create and simulate new models requires significant effort, which makes this process expensive. This can be streamlined by use of a reduced order model which can be computed more efficiently at the cost of accuracy. This way, promising design candidates can be identified faster and at less cost.

The focus of the work is on the development of reduced order models for LEDs using multiple approaches. To verify the results, several thermal FE simulations will also be performed. The position is open from now on.

#### Tasks

- Creation of computer models
- Thermal simulation with FloeFD
- Development of a reduced order model with Ansys Twin Builder and neural networks
- Documentation of the work

#### Profile

- Experience and interest in simulation
- Initiative and interest in scientific investigation

#### **Kontakt:**

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