

# **Thermographic imaging of free carrier density in silicon for solar cells**

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## **Abstract**

The measurement of free carrier density in silicon is a key parameter for the characterisation of silicon solar cell material. Carrier Density Imaging (CDI) is a valuable tool to obtain spatially resolved images of the free carrier density distribution. This article describes the experimental setup of CDI for absorption mode and recently developed emission mode measurements. The theoretical dependence of the absorption and emission of infrared radiation on the free carrier density is discussed. Results of absorption and emission mode measurements are presented and the advantages of the emission mode are elaborated.

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