Analysis of laser-welded joints between glass and silicon

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Work content

Laser welding is a precise joining process that typically requires no additional material. The thermal energy required for the joint is applied selectively by a laser. In this way, heterogeneous material systems such as glass and silicon can also be joined. These materials are widely used in microsystems technology and their combination is of particular interest for the encapsulation of microsystems. As part of the advertised work, the joints produced with an ultrashort pulse laser at the IMPT are to be analysed. For example, suitable analysis methods for investigating elemental distributions, existing stresses or thermal load capacities are to be determined and applied. Based on these investigations, an analysis concept is to be developed that can be used as a blueprint for the characterisation of other welded joints.

Type of work

Bachelor thesis

Requirements

- Independent and committed work
- Knowledge in the field of microsystems technology
- Previous knowledge of lasers advantageous

Starting date

Immediately

05.12.2023

Field of work: Joining technologies

Leibniz Universität Hannover

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