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Influence of the plasma activation on the joining of glass

Topic / Problem definition:

The interlayer-free bonding of optical materials plays an important role for various applications e. g. in space optics, microfluidics or high power laser systems. Bonding materials with different thermal properties or a subsequent temperature sensitive processes require a reduction of the annealing temperature with minimal reduction of the bonding strength. This may be achieved by varying the parameters for plasma activation [1]. The influence of different parameters of the plasma activation on the bonding strength shall be examined for glass substrates.

Tasks / Aim:

Aim of the work is the development of an adjusted plasma process to achieve high bonding strength at low annealing temperature.

- Literature study to evaluate actual limits of the plasma process and achieved bonding strength
- Definition of a parameter field for the plasma process
- Conduction of bonding experiments
- Estimation of bonding strength
- Optimization of bonding strength experiments

Contact:

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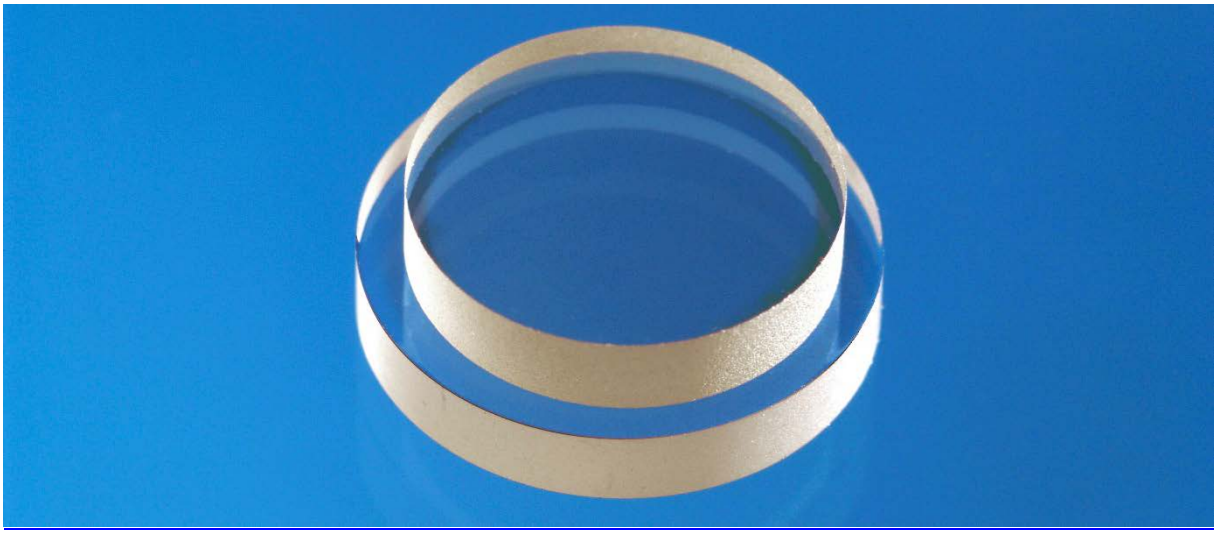

[1] S. Boden et. Al., Appl. Phys. Lett. 110, 181605 (2017)