

In most cases, the arising "run-out" errors become more intensified radially symmetrical around the contact point, from which reason they increase from the contact point to the periphery. In most cases, it involves a linearly increasing intensification of the "run-out" errors. Under special conditions, the "run-out" errors can also increase non-linearly.

Under particularly optimum conditions, the "run-out" errors can be ascertained not only by suitable measuring devices (EP2463892), but can also be described by mathematical functions. Since the "run-out" errors represent translations and/or rotations and/or scaling between well-defined points, they are preferably described by vector functions. Generally, this vector function is a function $f: \mathbb{R}^2 \rightarrow \mathbb{R}^2$, i.e. a mapping rule, which maps the two-dimensional definition range of the position coordinates onto the two-dimensional value range of "run-out" vectors. Although an exact mathematical analysis of the corresponding vector fields has not yet been able to be carried out, assumptions are made concerning the function properties. The vector functions are, with a high degree of probability, at least C^n $n \geq 1$ functions, i.e. at least continuously differentiable. Since the "run-out" errors increase from the contact point to the edge, the divergence of the vector function will probably be different from zero. With a high degree of probability, therefore, the vector field is a source field.

Embodiments of the present invention provide a device and a method for bonding two substrates, with which the bonding quality, in particular the bonding accuracy, especially at the edge of the substrates, is increased.

According to a first aspect of the present invention, there is provided a method for bonding a first substrate with a second substrate inside a sealed bonding chamber, said method including:

- a) fixing of the first and second substrates to respective first and second holding devices;
- b) arranging of the first and second substrates relative to each other;
- c) mutual approaching of the first and second substrates toward each other;
- d) contacting the first substrate with the second substrate at a bond initiation point;
- e) generating a bonding wave advancing from the bond initiation point to side edges of the first and second substrates; and
- f) influencing the bonding wave during advancing of the bonding wave, wherein the influencing of the bonding wave includes a change of a temperature and/or a change of a medium of surroundings in which the bonding wave runs.

According to a second aspect of the present invention, there is provided a device for the bonding of a first substrate with a second substrate, said device including:

- a bonding chamber;
- first and second holding devices for respectively holding and fixing the first and second substrates, wherein the first and second holding devices are configured for mutual approaching of the first and second substrates toward each other, for contacting of the first and second substrates and for generating a bonding wave; and
- influencing means for influencing the bonding wave during advancing of the bonding wave.

All combinations of at least two features given in the description, in the