

certain limits by the coating being clamped onto the underlying core of the wire guide roller, for example by clamping rings arranged at both ends of the coating. The clamping rings fix the jacket on the core of the wire guide roller and restrict a change in length of the jacket that is caused by a temperature change.

However, DE 10 2011 005 949 A1 does not teach a method of utilizing the different expansion of the core material and the jacket surrounding the core of the wire guide rollers spanning the wire web in a targeted manner for improving the geometry and the waviness of the wafers sliced from a workpiece.

~~Therefore, the object was~~ Embodiments of the invention seek to provide an improved method for sawing a multiplicity of wafers from a workpiece composed of semiconductor material, wherein, by means of the targeted influencing of the length of the wire guide rollers spanning the wire web, comprising a core composed of a first material and a jacket composed of a second material and enclosing the lateral surface of the core, a thermally induced change in length of a workpiece is compensated for and the geometry and waviness of the wafers sliced from the workpiece are improved as a result.

~~The object is achieved by means of~~ In an aspect, a method for sawing a multiplicity of wafers from a workpiece by means of a wire web of a wire saw, said wire web consisting of many parallel wire sections, wherein the wire web is spanned by at least two wire guide rollers (1), the wire guide rollers (1) each comprising a core (1a) having two side surfaces and a lateral surface, composed of a first material, each core (1a) is mounted rotatably along its longitudinal axis and comprises at least two separate cavities (5), the lateral surface of each core (1a) is enclosed by a jacket (1b) composed of a second material, and parallel grooves for guiding the wire sections of the wire web are cut into the jacket (1b), wherein the length of the jacket (1b) is altered thermally by means of at least

one cavity (5) being filled with a temperature-regulating means. The jacket (1b) is fixed on one side or on both sides of the wire guide roller (1) by means of a respective clamping ring (4), and the jacket (1b) can expand laterally over at least one clamping ring.

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The invention and preferred embodiments are described in detail below.

The invention comprises a method for sawing a multiplicity of wafers from a workpiece, preferably a workpiece composed of a semiconductor material.

Semiconductor materials are compound semiconductors such as, for example, gallium arsenide or elemental semiconductors such as principally silicon and occasionally germanium.

A workpiece is a geometrical body having a surface consisting of at least two parallel, planar surfaces (end faces) and a lateral surface delimited by the end faces. In the case of a circular cylindrical body, the end faces are round and the lateral surface is convex. In the case of a parallelepipedal cylindrical workpiece, the lateral surface comprises four plane individual faces.

The method according to the invention can be applied in any wire saw in which the sawing wire is guided by means of grooved wire guide rollers and these wire guide rollers comprise a core consisting of a first material and a jacket consisting of a second material and enclosing the core.

A wire guide roller (1) is a circular cylindrical body comprising a roller core (core) (1a) consisting of a first material and having two side surfaces (end faces) and a lateral surface. The wire guide roller is mounted rotatably along its longitudinal axis.

The lateral surface of the roller core (1a) is preferably enclosed by a jacket (1b) consisting of a second material. Parallel grooves for guiding the sawing wire are cut into the

Patent claims:

1. A method for sawing a multiplicity of wafers from a workpiece by means of a wire web of a wire saw, said wire web consisting of many parallel wire sections, wherein the wire web is spanned by at least two wire guide rollers (1), the wire guide rollers (1) each comprising a core (1a) having two side surfaces and a lateral surface, composed of a first material, each core (1a) is mounted rotatably along its longitudinal axis and comprises at least two separate cavities (5), the lateral surface of each core (1a) is enclosed by a jacket (1b) composed of a second material, and parallel grooves for guiding the wire sections of the wire web are cut into the jacket (1b), wherein the length of the jacket (1b) is altered thermally by means of at least one cavity being filled with a temperature-regulating means.
2. The method as claimed in claim 1, wherein the jacket (1b) is fixed on one side or on both sides of the wire guide roller (1) by means of a respective clamping ring (4).
3. The method as claimed in claim 2, wherein the jacket (1b) can expand laterally over at least one clamping ring.
4. The method as claimed in any of claims 1 to 3, wherein each cavity (5) is filled with a temperature-regulating means having a different temperature in each case.

Patent claims:

1. A method for sawing a multiplicity of wafers from a
workpiece by means of a wire web of a wire saw, said wire
web consisting of many parallel wire sections, wherein the
5 wire web is spanned by at least two wire guide rollers (1),
the wire guide rollers (1) each comprising a core (1a)
having two side surfaces and a lateral surface, composed of
a first material, each core (1a) is mounted rotatably along
10 its longitudinal axis and comprises at least two separate
cavities (5), the lateral surface of each core (1a) is
enclosed by a jacket (1b) composed of a second material,
and parallel grooves for guiding the wire sections of the
wire web are cut into the jacket (1b), wherein the length
15 of the jacket (1b) is altered thermally by means of at
least one cavity being filled with a temperature-regulating
means, wherein the jacket (1b) is fixed on one side or on
both sides of the wire guide roller (1) by means of a
respective clamping ring (4), and wherein the jacket (1b)
20 can expand laterally over at least one clamping ring.
2. The method as claimed in claim 1, wherein each cavity (5)
is filled with a temperature-regulating means having a
different temperature.