WHAT IS CLAIMED IS:

1. Method of dividing a wafer (W), having on one side (1) a device area (2) with a plurality of devices partitioned by a plurality of division lines and a peripheral marginal area (3) with no devices formed around the device area (2), into dies, the method comprising:

attaching an adhesive tape (4) for protecting devices on the wafer to the one side (1) of the wafer (W), the adhesive tape (4) adhering to at least some of the devices;

connecting a carrier (7) for supporting the adhesive tape (4) to the side of the adhesive tape (4) being opposite to the side in contact with the devices by connecting means (10);

grinding the side (6) of the wafer (W) being opposite to the one side (1) for adjusting the wafer height; and

cutting the wafer (W) along the division lines;

characterized in that

the connecting means (10) exhibits an annular shape and is arranged at a peripheral portion of the wafer.

2. The method according to claim 1, wherein the connecting means (10) exhibits adhesive characteristics being removable by energy input, the connecting means (10) including UV-curable glue, thermal-curable glue, or a combination thereof.

3. The method of claim 2, further comprising

inputting energy into the connecting means (10) for releasing the connection between carrier (7) and adhesive tape (4), and

removing the carrier (7) from the adhesive tape (4).

4. The method according to any one of claims 1 to 3, further comprising
forming a recess in the carrier (7) for insertion of the connecting means(10).

5. The method according to any one of claims 1 to 3, wherein the one side (1) of the wafer (W) is partially cut by laser and a further area of the wafer is cut mechanically.

6. The method according to claim 6, wherein the further area of the wafer (W) is cut mechanically from the one side (1) of the wafer (W) or from the side (6) of the wafer (W) being opposite to the one side (1).

7. The method according to any one of claims 1 to 3, wherein the side (6) of the wafer (W) being opposite to the one side (1) is mechanically partially cut and a further area of the wafer (W) is cut by laser from the side (6) of the wafer (W) being opposite to the one side (1).

8. The method according to any one of claims 1 to 3, wherein the cutting of the wafer is performed before grinding of the wafer.

9. The method according claim 1, wherein the steps of claim 1 are performed in the listed order.

10. The method according to any one of claims 1 to 3, wherein the surface of the adhesive tape (4) opposite the surface contacting the devices is parallelized with the surface of the wafer (W) opposite the one side (1).

11. The method according any one of claims 1 to 3, further comprising
attaching an adhesive pick up tape (11) to the ground surface of the wafer (W).

12. The method according to any one of claims 1 to 3, wherein the carrier (7) is made of silicon, glass, or both.