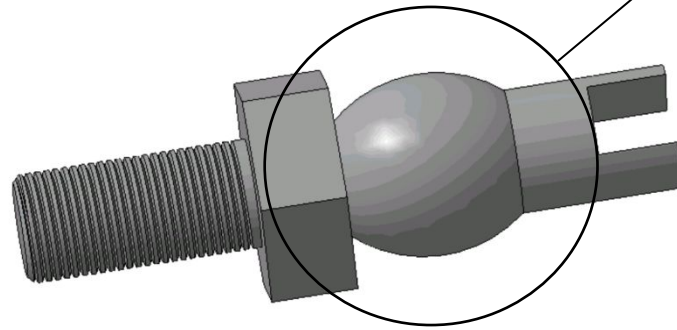
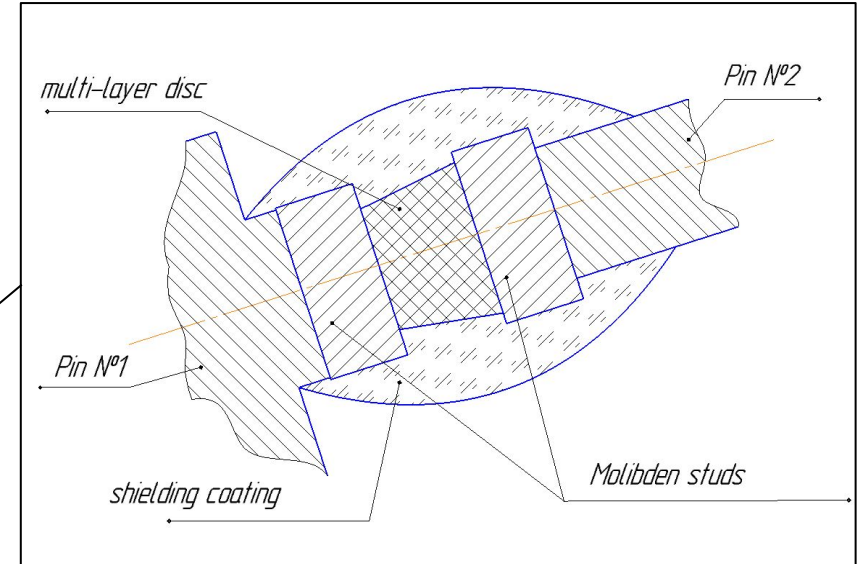


Silicon wafer separation

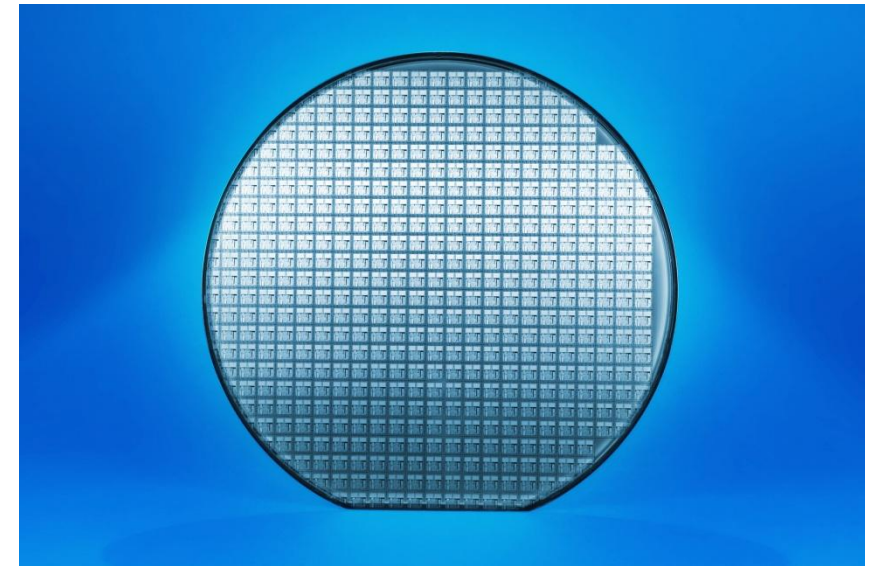
Field of application:

- multi-layer diodes
- Silicon die (array)



Content:

- Object of splitting
- Ways of splitting
- Research



Object of splitting



Properties

Physical

→ strength limit

Chemical

→ Chemical
interaction

Dimensions

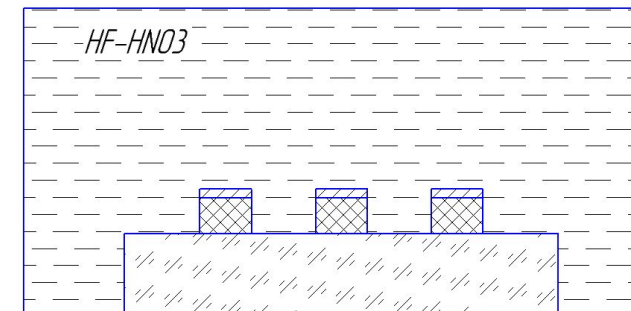
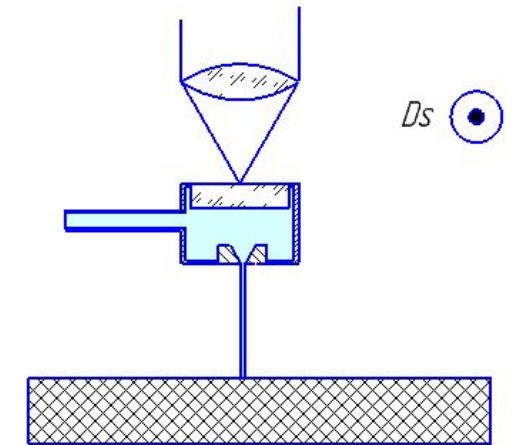
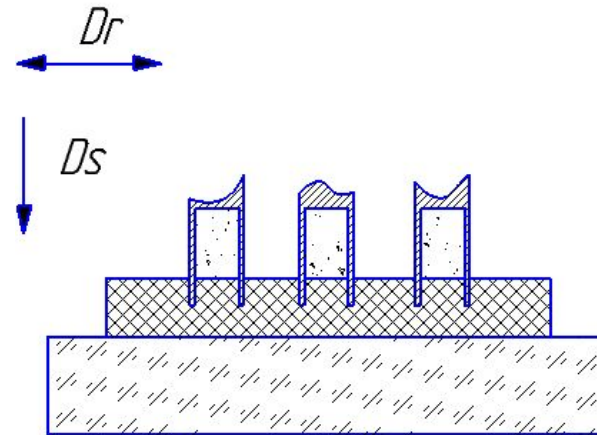
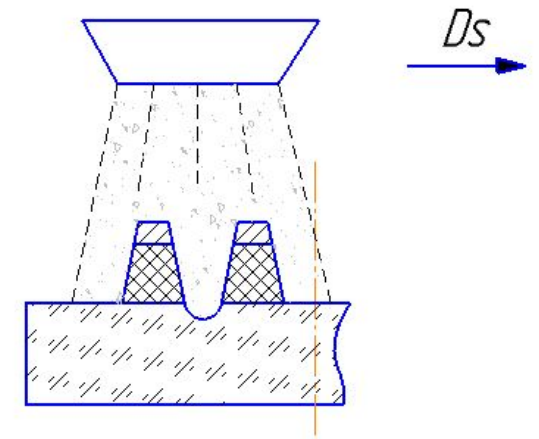
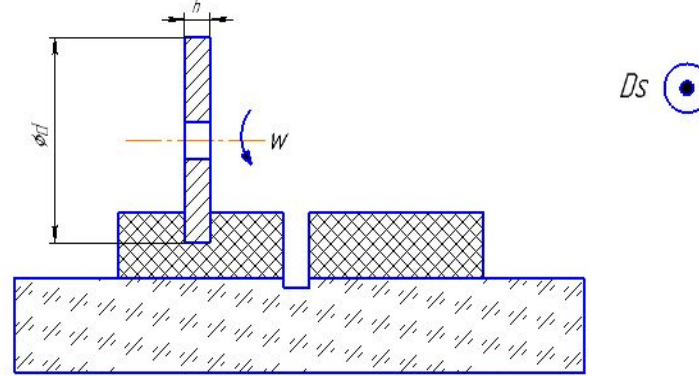
→ Diameter: 50..300MM
Thickness: 100..1000mkm

Thermal

→ Max temperature difference
(thermal cleavage)

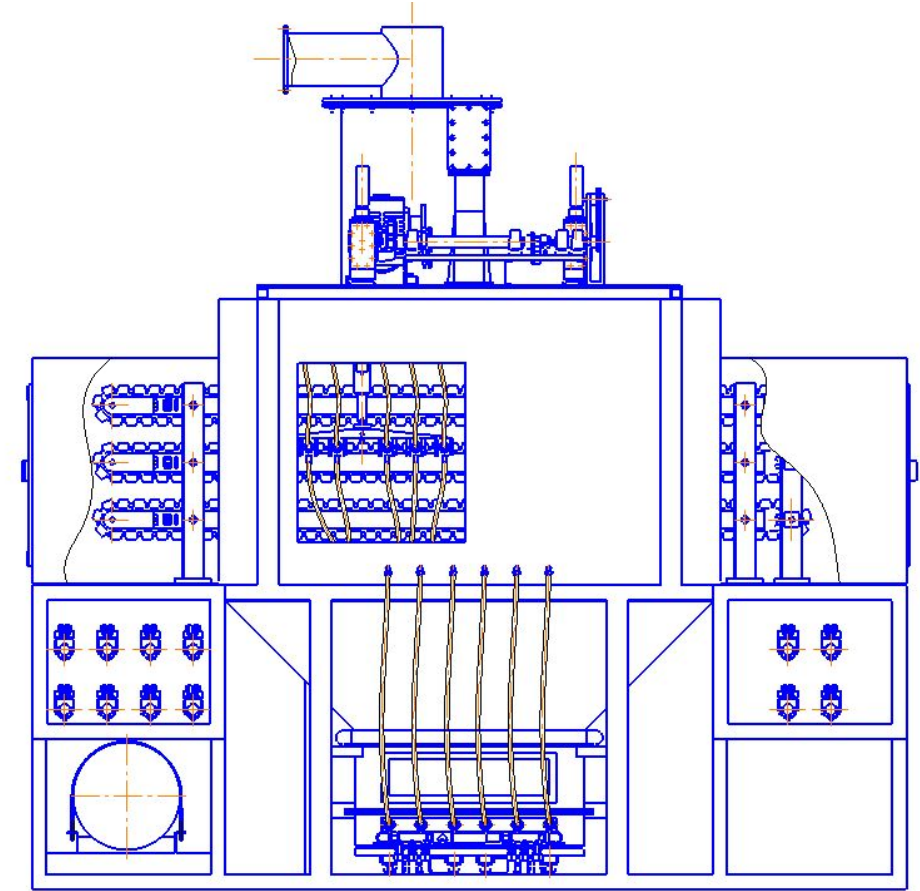
Ways of splitting

- Cutting with diamond blade
- Abrasive-jet etching
- Chemical etching
- Laser etching
- Ultrasonic drilling



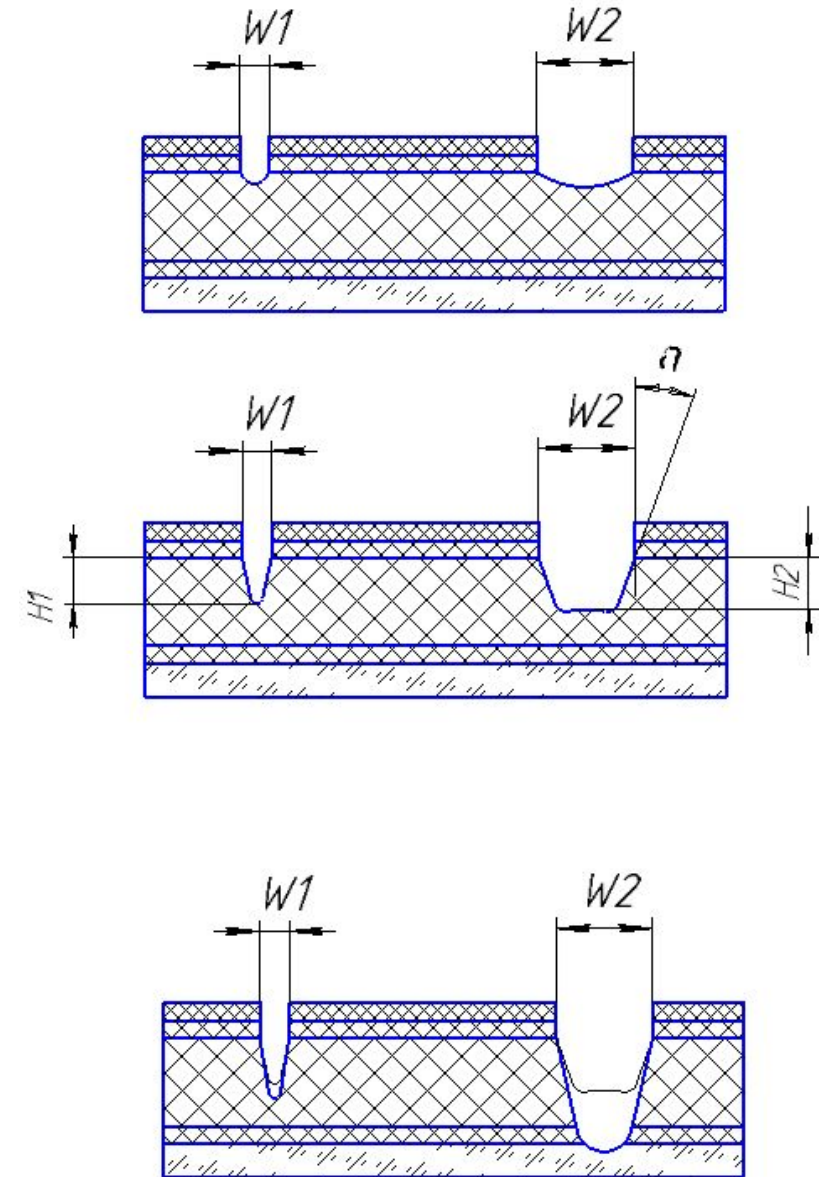
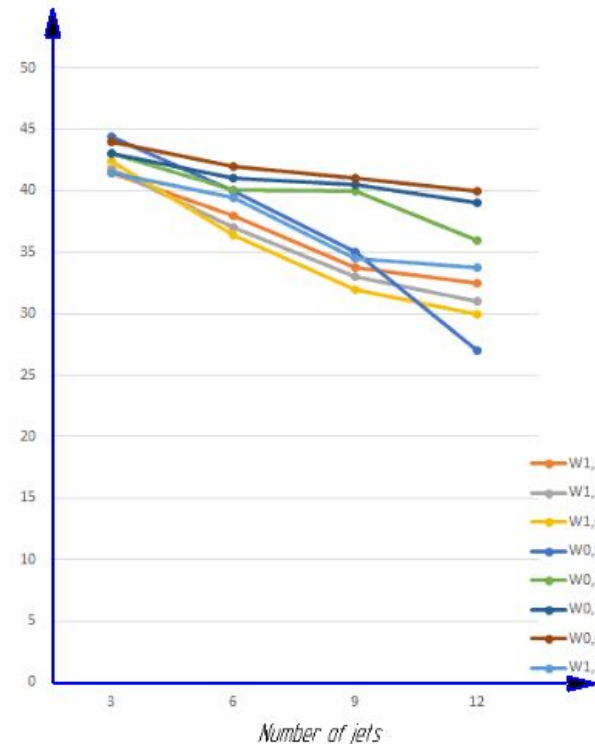
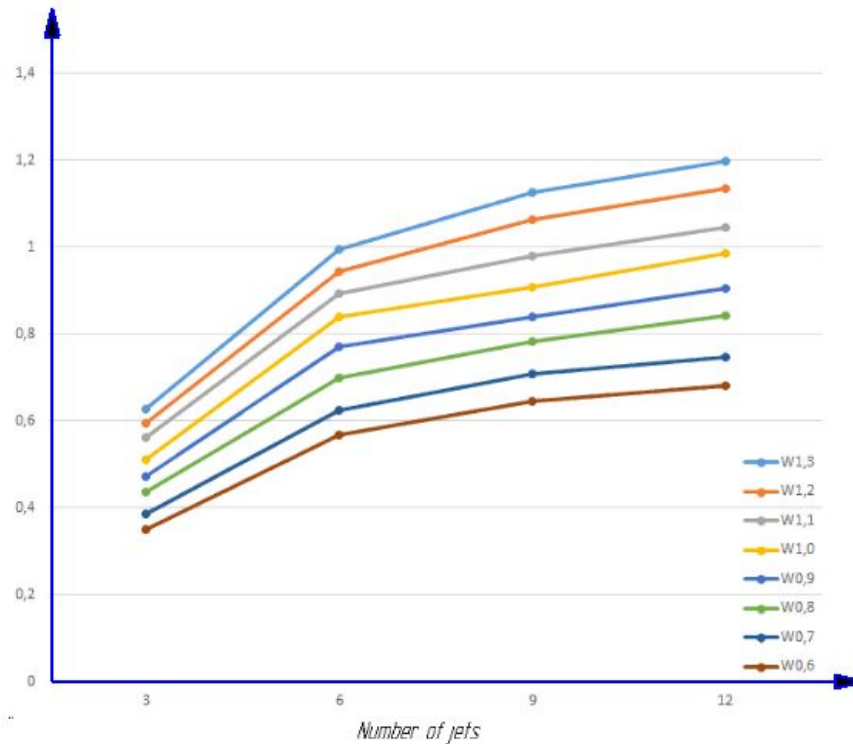
Advantages of abrasive-jet etching

- Yields per wafer
- Any form of crystals(3,4,5,6-angles, circle)
- no pollution of wafer
- low cost process
- high performance
- the ability to process plates of different thicknesses
- environmentally friendly process



Direction of process research

- Testing of modes
- Mathematical modeling of the process



Thanks for watching!