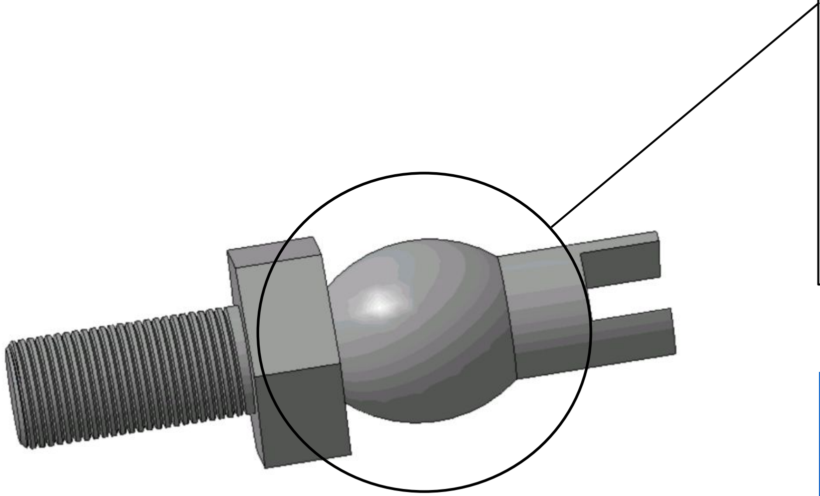
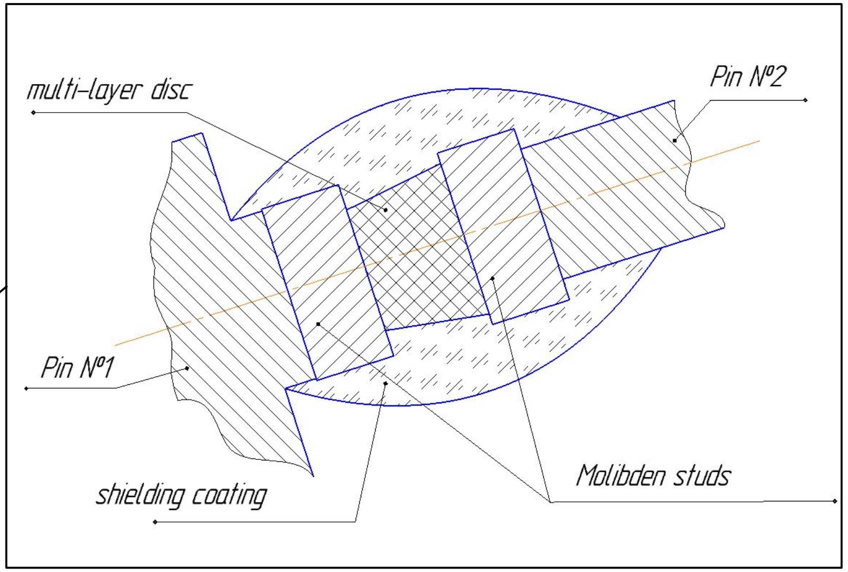
# Silicon wafer separation

# Field of application:

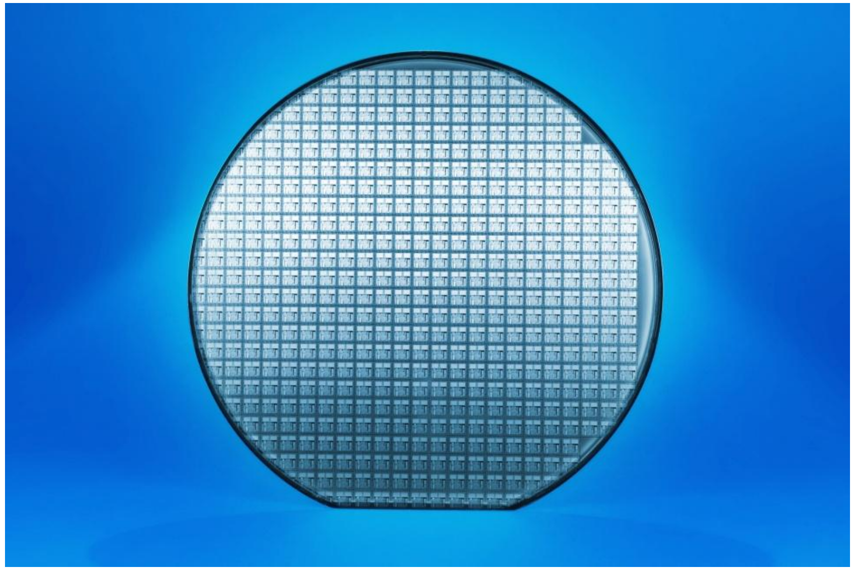
- multi-layer diodes
- Silicon die (array)





# Content:

- Object of splitting
- Ways of splitting
- Research

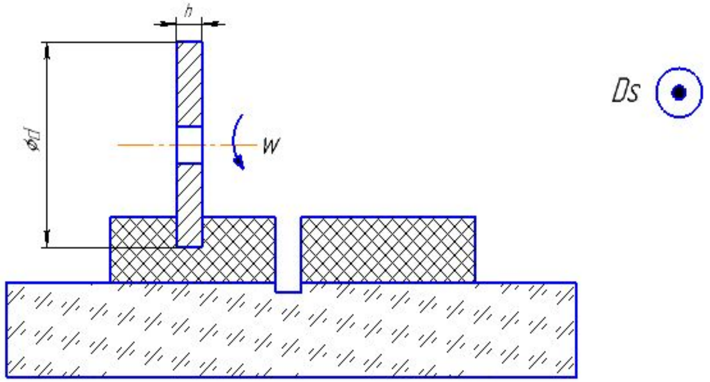


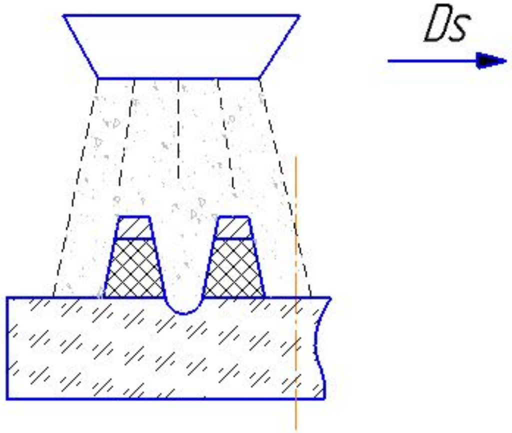
# Object of splitting

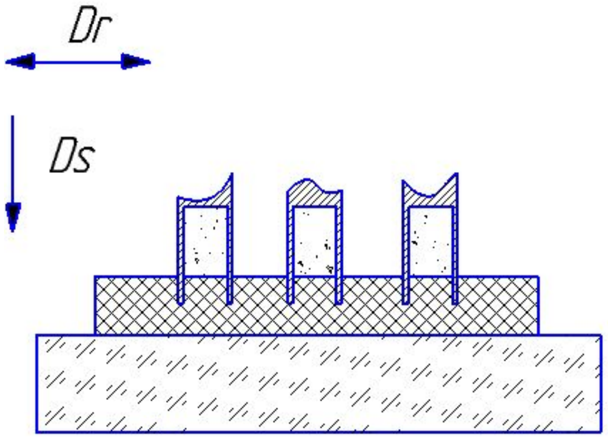
| Properties | |
|---|---|
| **Physical** | strength limit |
| Chemical | Chemical interaction |
| Dimensions | Diameter: 50..300мм<br>Thickness: 100..1000mkm |
| Thermal | Max temperature difference (thermal cleavage) |

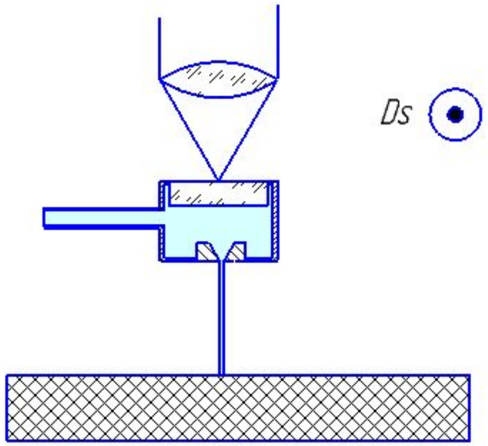
# Ways of splitting

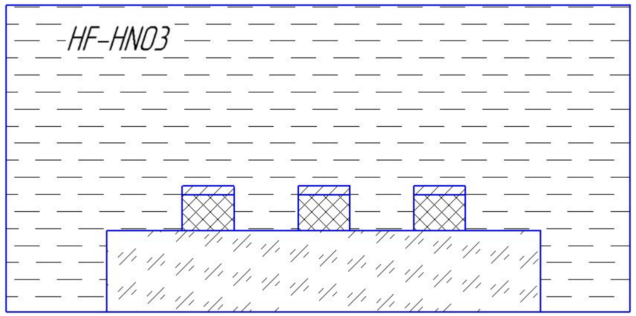
- Cutting with diamond blade
- Abrasive-jet etching
- Chemical etching
- Laser etching
- Ultrasonic drilling





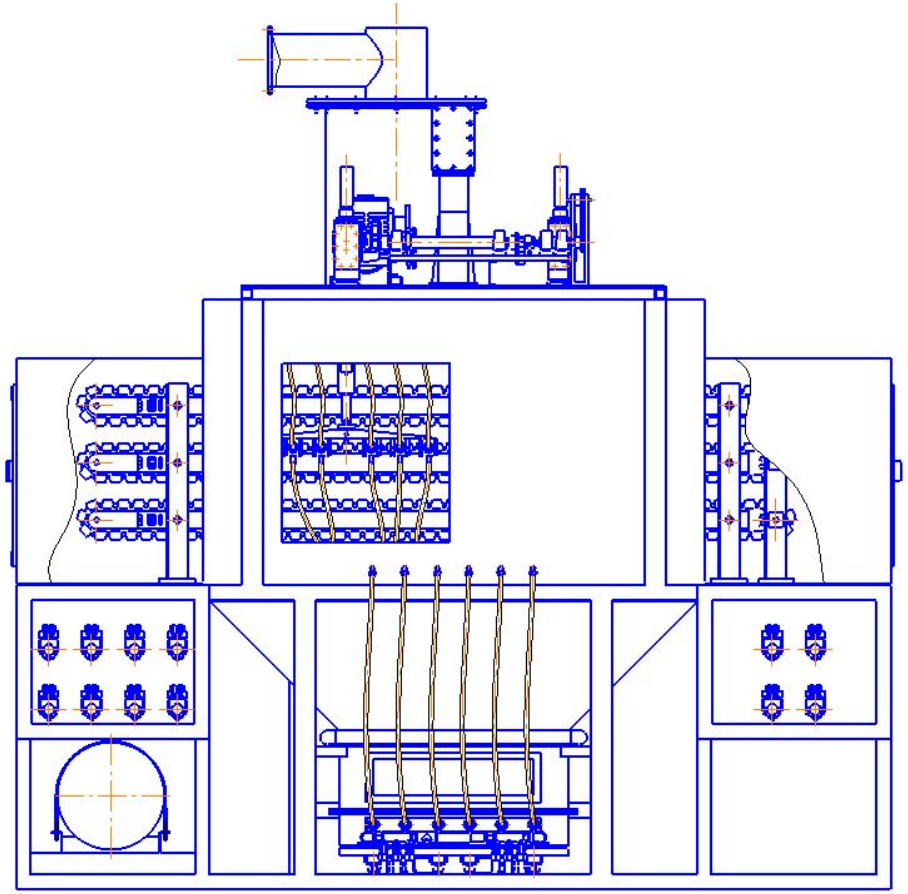






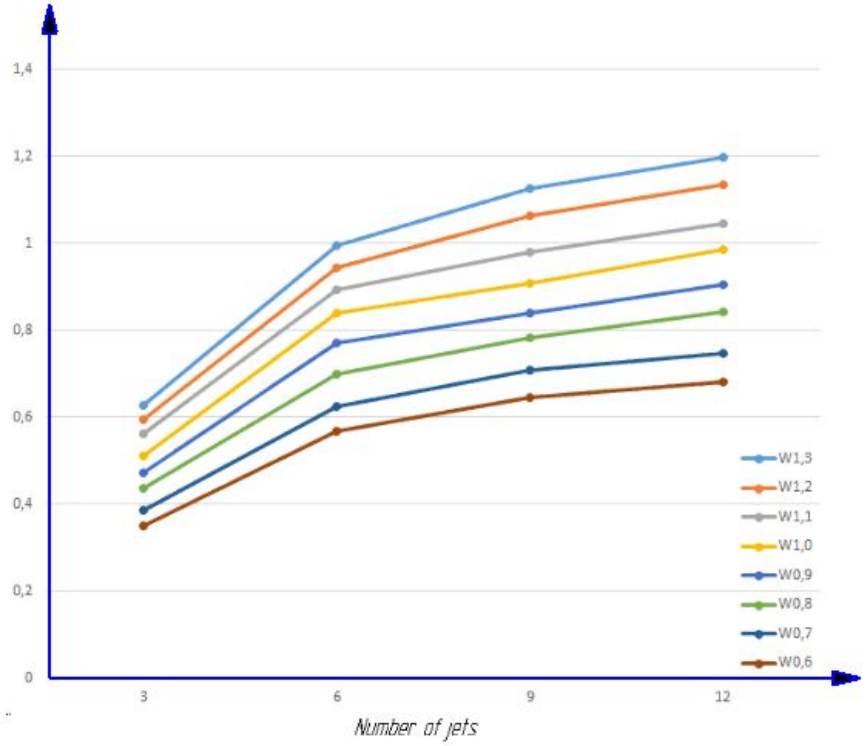
# Advantages of abrasive-jet etching

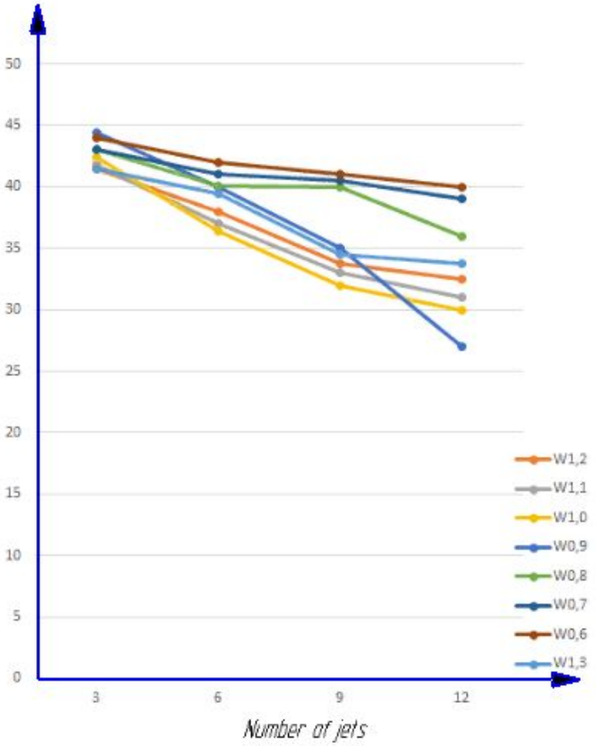
- Yields per wafer
- Any form of crystals(3,4,5,6-angles, circle)
- no pollution of wafer
- low cost process
- high performance
- the ability to process plates of different thicknesses
- environmentally friendly process

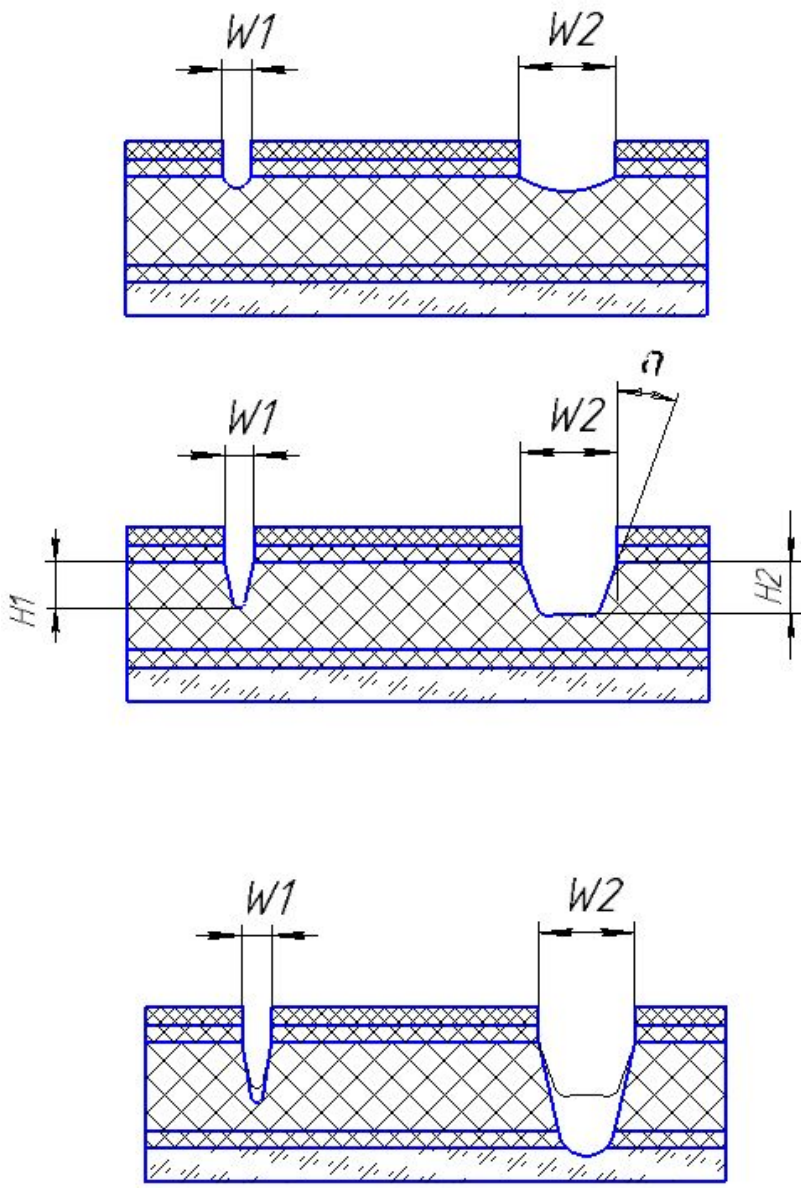


# Direction of process research

- Testing of modes
- Mathematical modeling of the process







Thanks for watching!