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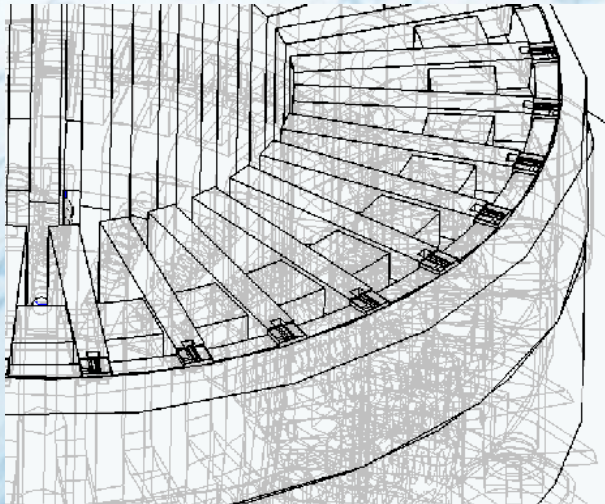
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EQUIPMENT ENGINEERING



KNOWING IS NOT ENOUGH,
YOU MUST APPLY;

WANTING IS NOT ENOUGH
YOU MUST DO.



ENGINEERING AREAS



quipment

- PROCESSING AND ASSEMBLY
- TESTING AND MEASURING
- THERMAL TREATMENT
- MECHANICAL DESIGN
- MACHINE VISION



oftware

- PROCESS BASED CODE
- EQUIPMENT BASED CODE
- MACHINE VISION



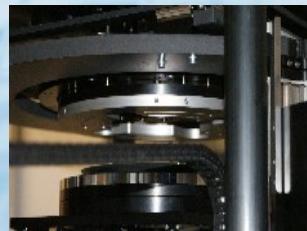
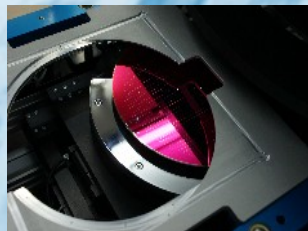
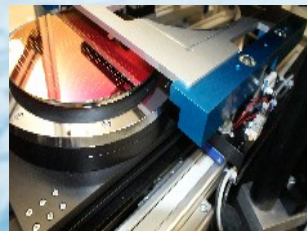
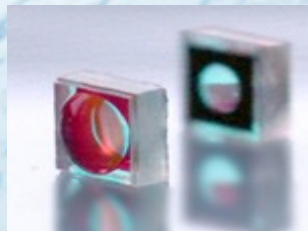
rocess

- PROCESS TECHNOLOGIES
- MEASUREMENT TECHNOLOGIES
- SIMULATIONS



• WAFER PLACING UNIT

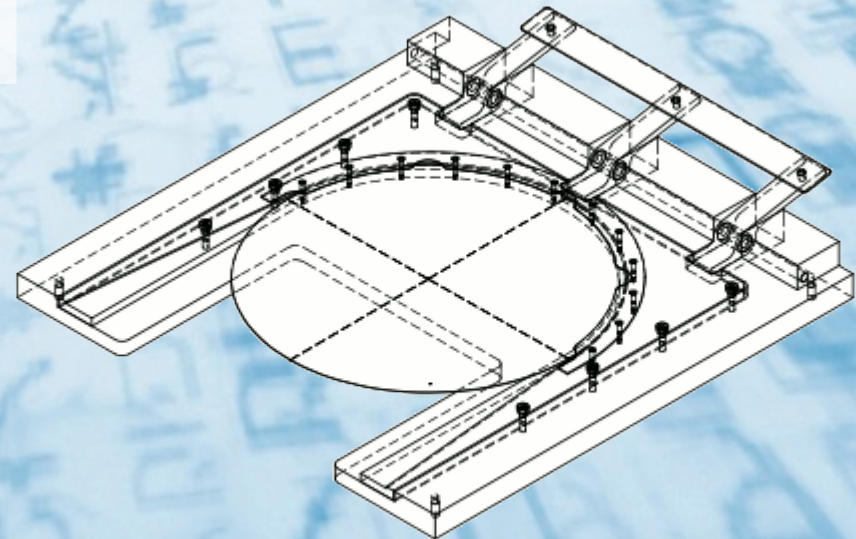
- device dimensions: 6" / 8" wafer
- positioning accuracy: $\pm 1\mu\text{m}@3\text{sigma}$
- integrated uv-curing capability
- passive focussing algorithm for z-measurements
- contact-less wedge compensation





- **MANUAL WAFER SEPARATION UNIT**

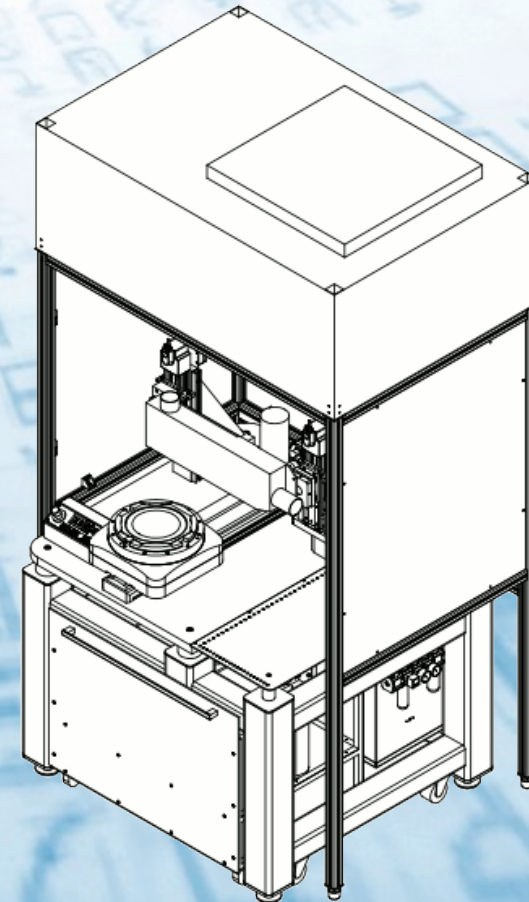
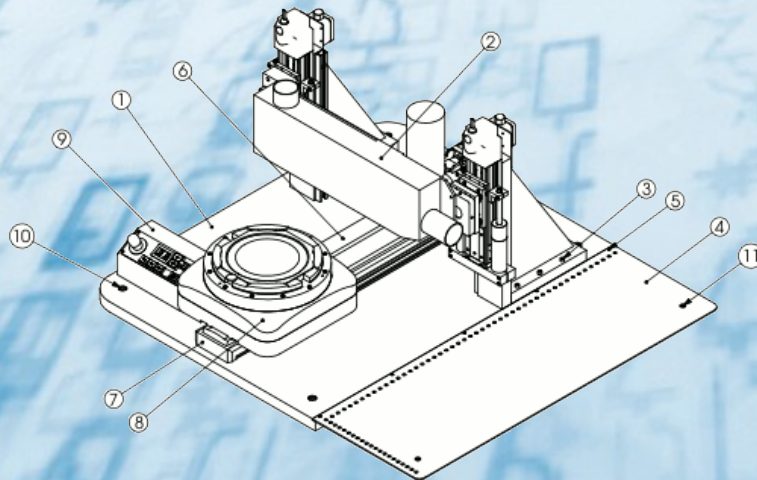
- device dimensions: 6" / 8" wafer
- simple separation without any wafer damaging
- standalone bench top unit
- no wafer thickness dependencies





• WAFER CLEANSING SYSTEM

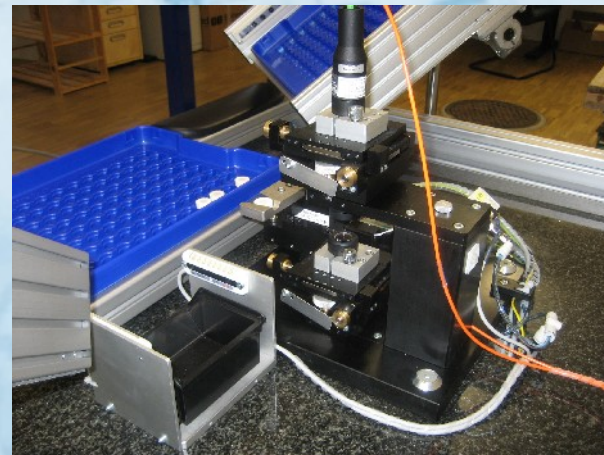
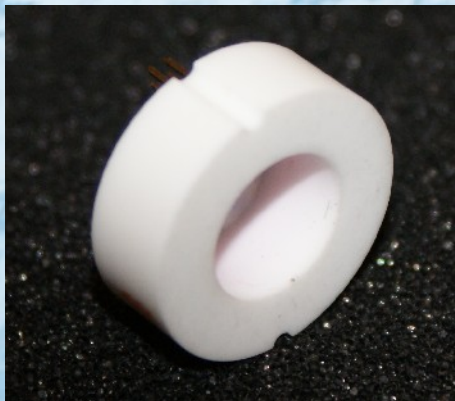
- device dimensions: 6" / 8" wafer and related tools (round and square)
- liquid brushing cleansing with two selectable and fill level controlled solvent receptacles
- remote programming and administration of process recipes (100 recipes storable)
- solvent drawer for user friendly replacement





- CERAMIC THICKNESS MEASUREMENT SYSTEM

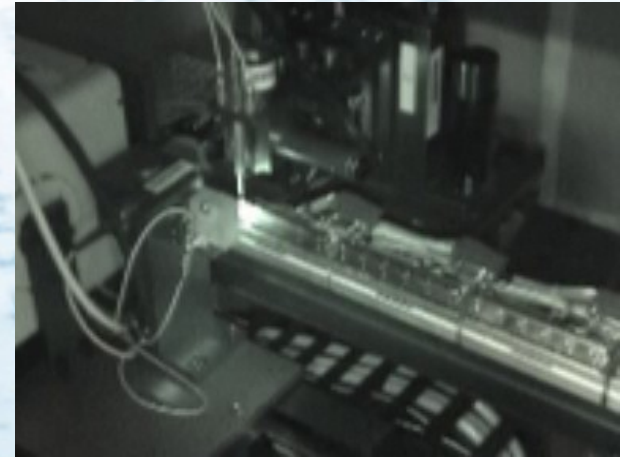
- DUT dimensions: cylindrical 9mm diameter
- measurement accuracy: $1.5\mu\text{m}@3\sigma$
- cycle time: 6s for pass / fail selection
- differential sensing setup for reliable measurements





- SEMICONDUCTOR LASER BAR CHARACTERISATION SYSTEM

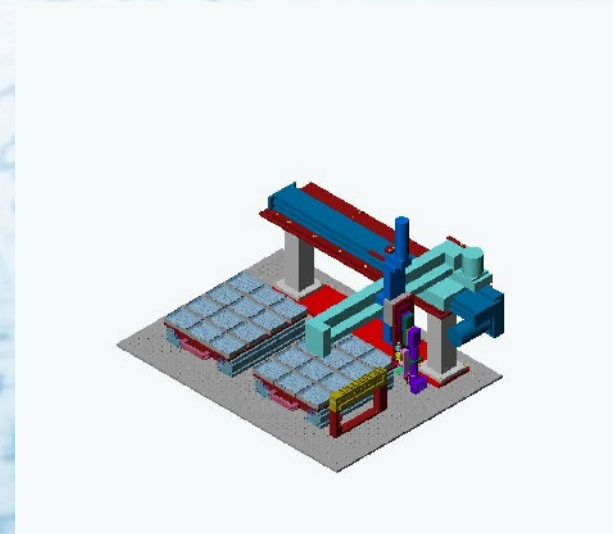
- DUT dimensions: $300 \times (750-2200) \times 150 \mu\text{m}^3$
- characterisation power: up to 10W
- measures front and backside power, vertical and horizontal far-field and optical spectrum
- force controlled contact-needle with positioning accuracy of $\pm 1 \mu\text{m}@3\text{sigma}$





- SEMICONDUCTOR COS CHARACTERISATION SYSTEM

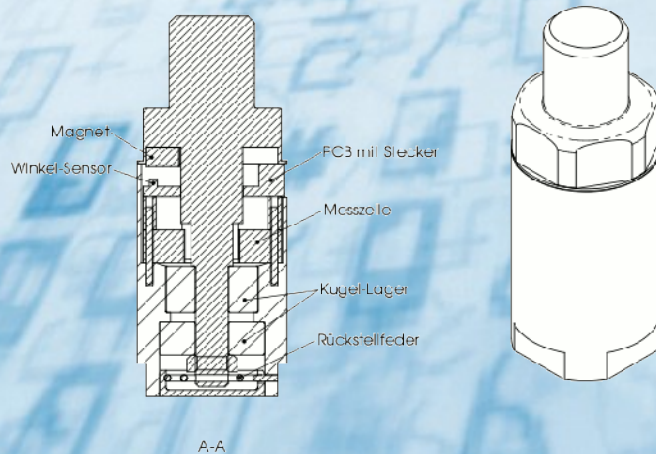
- fully automated testing system with loading capacity of 960 devices (autonomy time: ~3.2h)
- characterisation power: up to 10W
- measures front and backside power, vertical and horizontal far-field and optical spectrum
- thermal stabilisation for stable measurements





• TORQUE AND ANGLE MEASUREMENT SENSOR

- torque measurement (range: 0-4Nm) and included angle measurement (range: 0-22°) with an overall accuracy of $\pm 0.1\%$ FS
- supply voltage range from 6-28V, power consumption of 15mA@28V
- voltage output for torque and angle value





• TOOL CONDITIONING UNIT

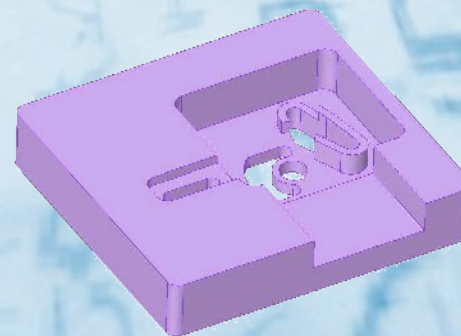
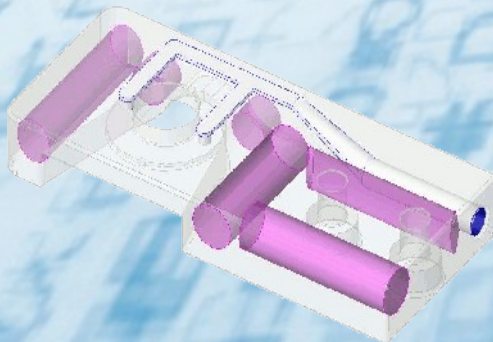
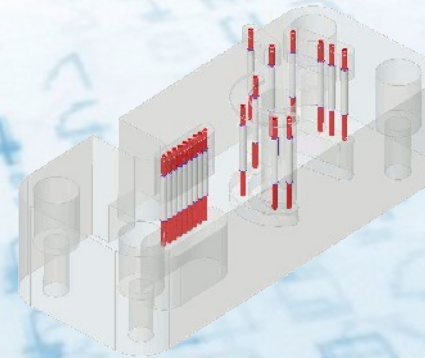
- homogeneous temperature distribution allows reliable device conditioning up to 120°C
- 19-inch form factor for high package density with chamber dimensions of 9-inch square
- three button interface to simplify user handling
- remotely programmable temperature recipes for each plug-in





- **RAPID PRODUCT DEVELOPMENT**

- shorten prototype development cycle down to 5 days
- dimensional accuracy in the range of $\pm 20\mu\text{m}$
- consistent 3D-modelling during the whole product development cycle





THANK YOU FOR YOUR ATTENTION

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If you always put limits on everything you do,
physically or anything else,
it will spread into your work and into your life.

There are no limits. There are only plateaus, and
you must not stay there,
you must go beyond them.

Bruce Lee