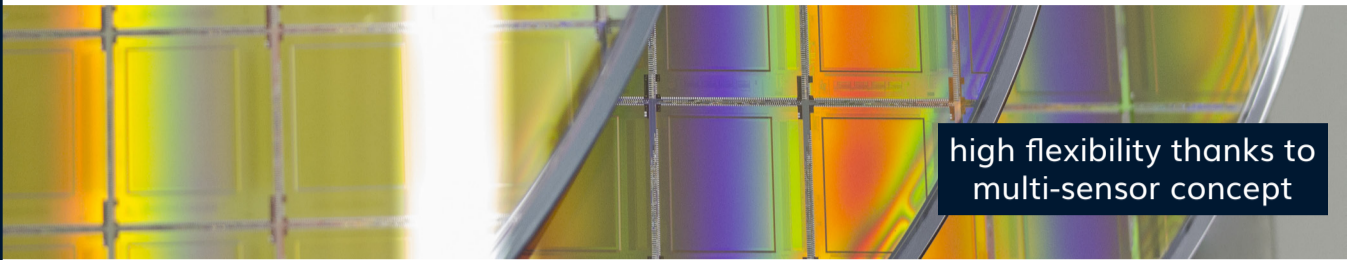


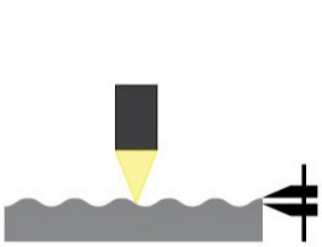
# How to define wafer and MEMS quality in manufacturing process



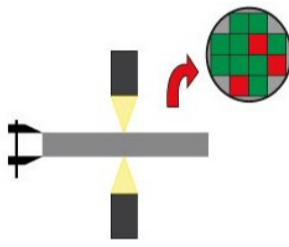
## Multi-sensor metrology for microelectronics and wafers

- > sample thickness, TTV, bow, warp, roll-off amount, parallelism, flatness, roughness, layer thickness, stress, step height, bumps, pitch, coplanarity, vias and trenches, 3D topography, critical dimensions and flank angle, overlay ...
- > measurement of semiconductors and compounds, sapphire and glass wafer
- > automated handling of panels, SEMI standard wafers, highly warped wafers (e.g. eLWB), bonded wafers, wafers on tape, TAIKO, bare and thinned wafers and even Fan-Out wafers
- > process control and optimization in high-volume manufacturing (HVM), quality assurance and R&D
- > combination of various measurement tasks using different sensors to run fully automated in one hybrid task
- > very fast 3D mapping or profiles with optical metrology

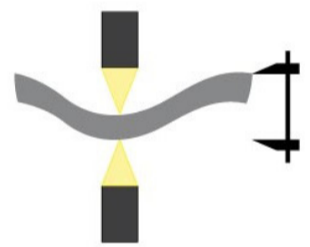
and much more...



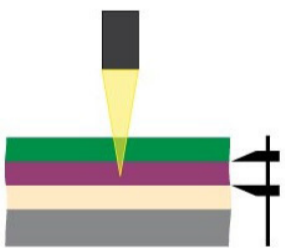
Standard topography measurement



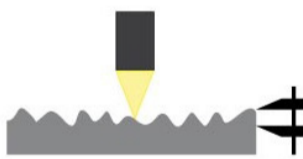
Measurement of global and local wafer parameters



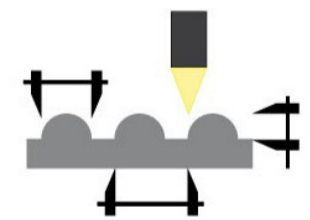
SEMI-compliant bow and warp measurement



Thin film and layer stack measurement



DIN/ISO-compliant roughness and waviness measurement



Bump dimensions and coplanarity

## Technical solution



**MicroProf® FS** -  
Automated hybrid metrology  
for semiconductor fabrication