

TNO

It is TNO's mission to help the advanced Dutch industry in innovating. One of the focus areas of TNO is Big Science with activities in ground based astronomy, nuclear fusion, CERN/CLIC as well as in space instrumentation and other projects.

Product information

TNO provides system architecture, multi-disciplinary (pre)design, alignment plans and execution, calibration plans and execution, and control of high-end opto-mechanical instruments and mechanisms. Realization and delivery of these systems is preferable done with industrial partners, certainly for larger instruments and for series production. Thus, TNO hopes to open new markets for these industries.

The instruments that TNO develops are characterized by picometer stability and sub-nanometer positioning accuracy; often operating in extremely hostile environments with long life time; and where necessary with intelligent image interpretation.

TNO's expertise in (adaptive) optics, mechanical engineering, control, image processing and contamination control enables the development of a wide range of complex instruments and mechanisms. Our flexure or magnetic bearing-based mechanisms have low friction and zero hysteresis. We produce quality optics with low wave-front error from a variety of materials including Aluminium, Fused Silica, Silicon Carbide and Molybdenum. We know how to prevent, monitor and remove contaminants, ensuring long life times. And our abilities to process and interpret images are worldwide unrivalled.

References

For nuclear fusion, TNO developed endoscopes (CXRS, Lidar), a control system for the plasma, contamination control tools and image processing for *in-situ* repair. For ground based astronomy, TNO has been playing important roles in the ESO programmes VLTi and E-ELT on delay lines, mirror actuation and laser launchers. TNO has developed tools for extreme precise measurements and control on aspherical optical parts and for rapidly finding particles on wafers. TNO's experience in space is applied in HIFI for Herschel, metrology for Gaia, OMI and soon also TROP-OMI and delay lines for Darwin. Important commercial customers of TNO in the field of high-end optomechanics are ASML and Carl Zeiss.

Bart Snijders

Business Development

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Turnover: 494,6 M€ | 4,400 employees

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TNO innovation
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