Klocke Nanotechnik

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Based on an invention of the Research Center Jülich Dr. Klocke and his team developed the Nanomotor and a series of Nanorobotics including electronics and software since 1992. With 15 years of experience in the field of Nanotechnology the company Klocke Nanotechnik produces and sells this Nanorobotics from components to complete systems worldwide. A modular system of unique products allows to configure a solution instead of starting a development. And these configurations are mostly by orders more precise then other existing solutions.

The Nanorobotics series offers handling, material processing and measurement with Nanometer precision, for example:

- Systems for Electron Microscopes to handle smallest objects or for probing of the next generation integrated circuits.
- Universal Testing Benches for any central development laboratory, that allow product development, prototyping, measurement and quality control, failure detection & analysis - with only one system and in until now unknown precision. This system can grow step by step is future-proof and spars investments.
- Micro production systems including micro adhesive bonding, designed for 3D-handling & assembly of microparts.

One example of a system solution is briefly described as showcase, the “SEM-FIB Workbench”: The SEM-FIB Workbench from Klocke Nanotechnik expands any Scanning Electron Microscope (SEM) and/or Focused Ion Beam (FIB) chamber to a material processing system and an analytical Nano-Workbench. The base of the SEM-FIB Workbench is the installation of 1 - 6 closed loop Nanorobotics Manipulators with single nm resolution into any existing SEM and/or FIB. These manipulators can be exchanged easily to allow a cost sparing dual use also in air. Plenty of different applications can be realized just by adding further modules, e.g.:

- The “Dimensional SEM/FIB” as 3D-profilometer and coordinate measuring machine
- The in-SEM “NanoFab” for automatic Nanohandling and assembly
- The Wafer Probing SEM: Nanoprobing for Semiconductor industry
- The Tribology SEM for stress tests, elasticity, reliability or friction measurements
- The Lithography SEM realized by a Nanorobotics sub-stage assembly.