

OPTICAL  
CHARACTERIZATION  
PLATFORM BASED ON  
LASER SCANNING

Mecwins was founded in 2008, and has developed a commercially viable optical characterization instrument based upon proprietary technology and patents.

Mecwins introduces a new instrument designed especially for the laboratory or research group that is interested in the static and dynamic characterization of single-chip cantilevers.

## Scanning Laser Analyzer for quick, reliable MEMS analysis

### SINGLE-CHIP CANTILEVER DEFLECTION DETECTION SYSTEM

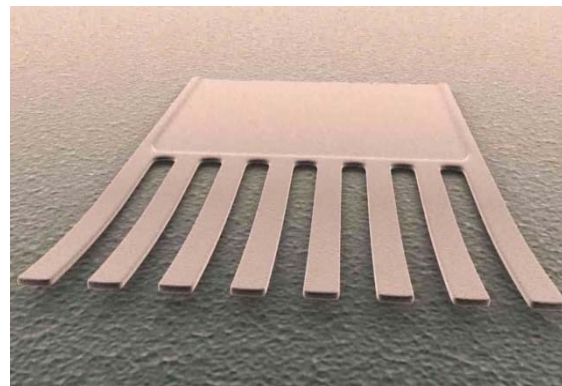
Mecwins has developed a technology to inspect surfaces, especially for an **R&D or Quality Control** laboratory. The instrument is based upon the optical beam deflection technique. The technology combines an automated two-dimensional scan with a laser beam and the acquisition of the resulting reflected light by a position sensitive detector. The association of the signals received allows for the direct *in-situ* measurement of the cantilevers' deflection. Adequate processing of the received signal yields the dynamic response of the MEMS being scanned. This instrument we call the Scanning Laser Analyzer or **SCALA** for short.

The **SCALA *mini*** was developed to characterize a single chip, in **static** or **dynamic** modes, and it can also be used to measure the thermal noise and **frequencies** associated with each cantilever. The platform is ideal for sensing, based upon its ability for profiling and dynamic analysis. An important aspect of the platform is that it can measure the deflection and vibration of practically **any** make or manufacture of cantilever, and is a simple yet powerful tool that can be used to get **quick, reliable results** for small to medium-sized research groups or laboratories.



OPTICAL CHARACTERIZATION  
TOOLS FOR MEMS, BIOSENSING,  
STATIC AND DYNAMIC MODES,  
FREQUENCIES, VIBRATION MODE  
ANALYSIS, THIN FILMS RESEARCH,  
ETC...

## Optical Characterization solutions for your research group and lab cantilever characterization requirements



### Technical specifications of SCALA *mini* at a glance

- ✓ Deflection measurement range from 1 nm to 40  $\mu$ m
- ✓ Scans practically any surface up to a 6mm x 6mm area
- ✓ X-Y resolution adapted to customer needs
- ✓ Liquid Cell (optional)
- ✓ Proprietary multi-functional software:
  - Profile detection measurements
  - Single point deflection measurements at any point on the mechanical sensor
- ✓ Frequency measurements (with thermal and mechanical excitation)

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# SCALA *mini*



SCALA *mini* is the ideal  
instrument for single-chip  
characterization

This platform is based upon the plug-and-play philosophy - simply load the chip into the holder tray, press the start button, and **SCALA *mini*** automatically detects all cantilevers' deflections and dynamic behavior, according to the preprogrammed experiment's instructions. **NO** complicated procedures required!