attoCFM I for Surface Quality Inspection

Confocal microscopes work by scanning a tiny light spot on a sample and by measuring the scattered light in the illuminated volume. First, the resolution obtained is better in comparison with the microscope operated conventionally, since a pinhole removes the out-of-focus information. Second, by scanning many thin sections through a sample, one can build up a very clean three-dimensional image of the sample. Finally, the non-contact method prevents from destruction or degradation of the sample.

Because confocal microscopy is a three-dimensional, high-resolution, and non-destructive tool, it is ideal for high resolution defect analysis and topography profiles (examples are shown in the pictures on the right).

The highly modular and flexible attoCFMI features fully adjustable excitation and collection ports enabling easy handling and filtering of the excitation and collection signal for raman spectroscopy. The attoCFMIopens up new possibilities in quantitative surface characterization in the micron / sub-micron range.

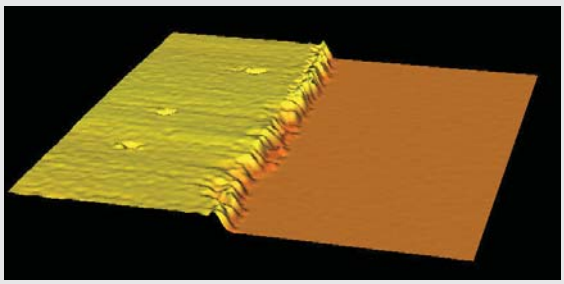

Fig. 1: *Confocal picture of GaAs-substrate: Inspection of a cleaved surface; the size of the image is 20 x 20 microns.*

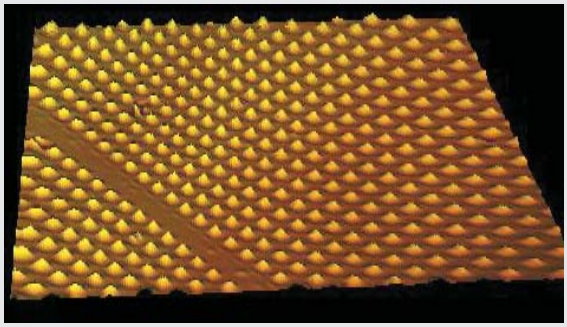

Fig. 2: *Confocal picture of a chess board grating (SiO_2 on Si) with a period of 2 microns, recorded in reflection mode. The sample has some defects on the surface structure.*

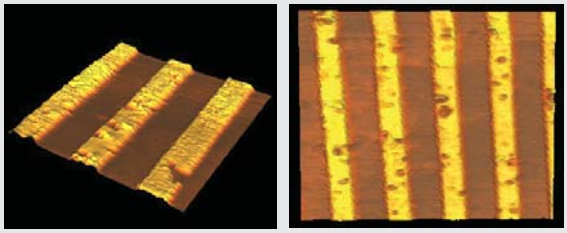

Fig. 3: *The aluminum on glass grating is damaged at certain locations. Left: size 30 x 30 microns; right: size 45 x 45 microns.*

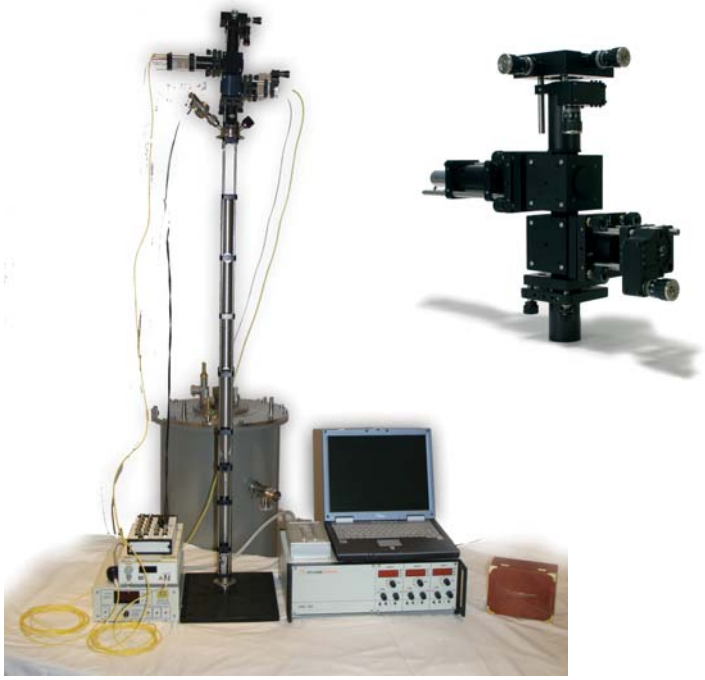

Fig. 4: *Complete attoCFM system and the confocal microscope head.*

RELATED PRODUCTS

attoCFM I	highly modular and flexible confocal microscope
ANPxyz100/LT	high precision, piezo electric, inertial positioner for big loads
ANSxy100	high precision piezoelectric scanner
ANC150/3	electronic controller
ANC200	electronic scan controller
attoSCAN	data acquisition software
attoVIEW	data viewing software

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