

3D - Imaging with attoCFM II

The confocal imaging system achieves out-of-focus rejection by two strategies:

- ▶ By illuminating a single point of the specimen with a focused beam, so that illumination intensity drops off rapidly above and below the plane of focus.
- ▶ By the use of a blocking pinhole in the conjugate plane of the previous plane of focus in order to eliminate the degrading out-of-focus information.

By scanning many thin sections through your sample, you can build up a very clean three-dimensional image of the sample. Confocal imaging can offer another advantage in favourable situations (small pinhole size, bright specimen): the resolution obtained is better than the resolution obtained with any microscope operated conventionally. In practice, the best horizontal resolution of a confocal microscope is (at $\lambda=630$ nm illumination) about 200 nm, and the best vertical resolution is less than 500 nm.



Fig. 3: The attoCFM II microscope sensor head.

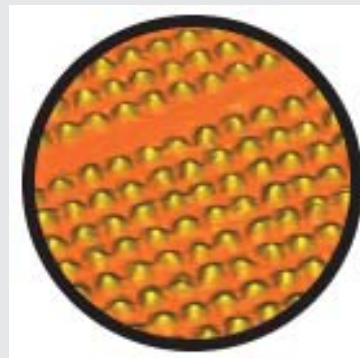


Fig. 1: Confocal picture of a chess board with 2 microns of period recorded in reflection mode.

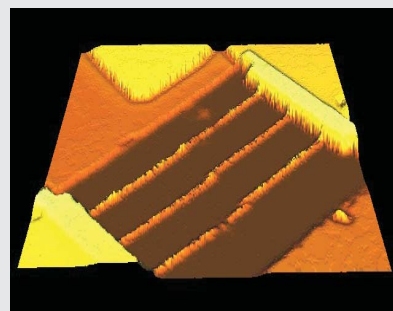
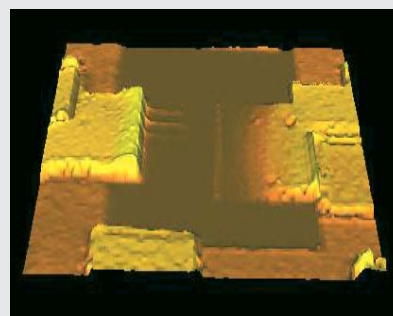


Fig. 2: Confocal picture of a tweezers structure; the tweezers are freely suspended. The size of the image is 30x30 microns recorded in reflection mode. The 200 nm wide structures are resolved with an excitation laser source of 630 nm! (C. Meyer et al., IEEE Nano 2004).

RELATED PRODUCTS

attoCFM II	highly stable and compact 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