

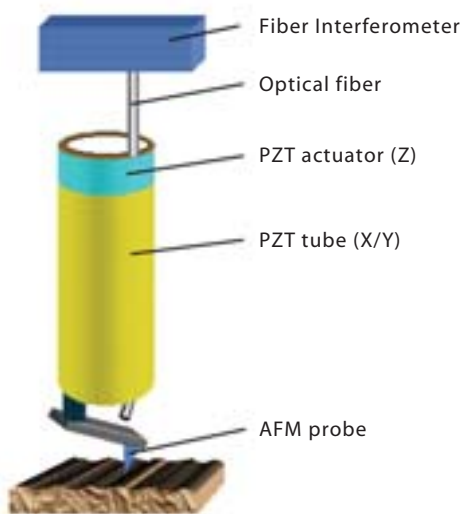
Microscope Objective Type Atomic Force Microscope 顯微接物鏡式原子力顯微鏡

Atomic force microscopes (AFM) can be used in the measurement of electric, magnetic and mechanical properties, and in nanometer-scale processing. ITRI has developed an optical fiber interference scheme to make miniature probe that can be combined with a traditional optical microscope to become a nanometer-scale apparatus. The scan volume (length x width x height) is $20\ \mu\text{m} \times 20\ \mu\text{m} \times 4\ \mu\text{m}$ with a resolution of $5\ \text{nm} \times 5\ \text{nm} \times 1\ \text{nm}$.

工研院利用光纖干涉技術使探頭微型化,並與傳統光學顯微鏡機台相結合,完成微型化原子力顯微鏡開發,掃描範圍(長 x 寬 x 高) $20\ \mu\text{m} \times 20\ \mu\text{m} \times 4\ \mu\text{m}$; 解析度: $5\ \text{nm} \times 5\ \text{nm} \times 1\ \text{nm}$ 。

Specifications

- Compact size AFM module
- $20\ \mu\text{m} \times 20\ \mu\text{m} \times 4\ \mu\text{m}$ scanning range
- $5\ \text{nm} \times 5\ \text{nm} \times 1\ \text{nm}$ scanning resolution



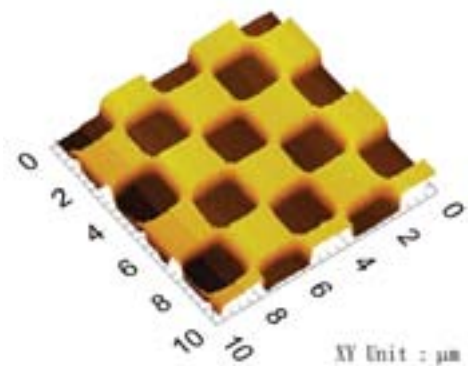
Metrology principle for Microscope Objective Type AFM



Microscope Objective Type AFM (with mini-size AFM probe module/build-in scanner)

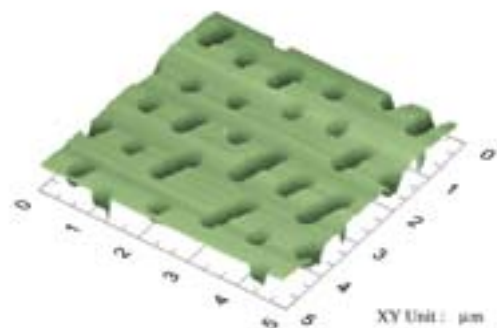
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Samples Scanning



2-D Phase Grating
(Pitch $4\ \mu\text{m}$, Depth $150\ \text{nm}$)

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DVD Disk
(Track Pitch $740\ \text{nm}$, Pit Depth $180\ \text{nm}$)

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