高性能多功能原子力显微镜 afm+

产品名称	高性能多功能原子力显微镜 afm+
公司名称	玛瑞柯（上海）贸易有限公司
价格	面议
规格参数	
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产品详情

产品介绍：

高性能多功能原子力显微镜(afm+)
美国anasys公司的afm+可以提供全面的原子力显微功能，具有强大的分析能力，使得afm不仅仅是一个普通的成像工具，还可以进行材料纳米级尺度的成分分析，热性能和机械性能的分析。
afm+的主要特点：
简洁的安装与操作
□ afm+为最便利的使用而设计制造。预装的悬臂能够快速简易的完成对齐
□ 仪器集几十年afm设计大师的经验之大成，即使初次使用也能快速获取结果
完整的afm工作模式

☐ 包含所有常规成像模式

☐ 独有高分辨率低噪音的闭环成像

强大的纳米级定位分析技术

☐ 热学性能：独有的热探针技术，提供纳米级红外分析

☐ 机械性能：洛伦兹接触共振模式能够提供宽频纳米机械分析

☐ 化学性能：可升级具有纳米红外光谱技术实现局部化学组分分析

技术参数：

高性能多功能原子力显微镜（afm+）	
xy方向扫描范围	80x80um 电容式闭环感应
z方向扫描范围	>7um
最大样品尺寸	40mm（直径）
标准成像模式	接触模式；轻敲模式；力曲线模式；力调制模式

可选成像模式	纳米热分析(nanota)；洛伦兹接触共振(lcr)；扫描热显微镜(sthm)； 导电原子力模式（catm）；其他模式可增加

应用案例：

afm + thermal analysis

nanoscale thermal analysis (nano-ta)

based on our proprietary thermal probe technology, the afm+ allows you to obtain transition temperatures on any local feature of your sample or to obtain a transition temperature map.

an afm image with nano-ta data of a toner particle. the particle was embedded in epoxy and microtomed. the topography of the sample shows variations in structure, which can then be analyzed using nano-ta. toner particles include a number of components (wax, resin, dye, etc.) that exhibit different transition temperatures.

scanning thermal microscopy (sthm)

this mode of the afm+ allows you to map relative thermal conductivity and relative temperature differences across your sample.

the 4 μ m x 8 μ m image shown here utilizes the scanning thermal microscopy (sthm) functionality of the afm+system on a carbon fiber – epoxy composite sample. the sample was cut and polished to form a smooth surface. the height image (left) shows a number of carbon fibers, while the sthm image (right) shows the change in probe temperature on the two materials due to their differences in thermal conductivity. this sample demonstrates the high lateral-resolution capability of the sthm technique.

transition temperature microscopy

transition temperature microscopy (ttm) is a fully automated mode in which an array of nano-ta measurements are rapidly performed and each temperature ramp is automatically analyzed to determine the transition temperature.

an optical image and a ttm map of a banded spherulite composed of poly (l-lactic acid) (plla). this ttm map was created by using the motorized xy stage. the blue areas in the ttm map are amorphous plla; the red and yellow areas are crystalline areas. the “ onion-like ” structure in the spherulite was created by stepping the temperature back and forth during the crystallization process to create regions with a higher or lower degree of crystallinity. sample courtesy of j. morikawa, tokyo institute of technology.

afm + mechanical

mechanical properties of your sample can be collected using a contact resonance method to map stiffness variations simultaneously with the topography.

a 4 μ m x 8 μ m topography image and stiffness map of a three-component polymer blend. the stiffness map, which measures the variation in modulus by analyzing the contact resonance of the cantilever, clearly resolves the three materials.

upgradeable analytical capabilities afm + ir spectroscopy

- point-and-click nanoscale ir spectroscopy

- ir spectra that correlate to ftir libraries

- chemical imaging

topography and ir images collected at 1650 cm-1 and 1740 cm-1 of streptomyces bacteria. these bacteria form lipid-filled vesicles in later stages of growth. the location of these vesicles can be determined by imaging at 1740 cm-1, an absorption band specific to the lipid. the vesicles can be resolved to sub-100nm resolution using the nanoir.

multifunctional nanoscale measurement suite

the new afm+ is fully upgradeable to our nanoir system, a probe-based measurement tool that utilizes infrared spectroscopy to reveal chemical composition at the nanoscale. the nanoir also provides high-resolution characterization of local topographic, mechanical, and thermal properties. potential application areas span the realms of polymer science, materials science, and life science, including detailed studies of structure-property correlations.

an example of the multi-property measurement capability of the nanoir system. the sample is a multilayer film composed of polyethylene and polypropylene. the two materials can be clearly identified by their unique absorption bands. in addition, the difference in stiffness and transition temperature of the two materials can be measured.