

Environmental Control Accessories

- Increase Measurement Capability with Humidity and Temperature Control

The Anasys Instruments' **Humidity Controller environmental enclosure** provides humidity control in a secure environment for both AFM and AFM-IR measurements for nanoIR™ systems. The system comes with a compact, bench-top relative humidity generator that controls dew point using a controlled flow of dry nitrogen gas bubbled through water. An integrated sensor is included, and can be controlled through the system operating software. Non-condensing operation requires the heater cooler unit.

Heating and cooling

The sample heater/cooler system for nanoIR systems provides sample heating and temperature control for both AFM and AFM-IR measurements. A separate control station is included with the heater/cooler, enabling control through the system operating software. This system is compatible with AFM and AFM-IR when used separately or when used with the environmental control.

Humidity Controller

Available humidity control range	4–95% non-condensing*
Maximum gas flow	200 ml/min
Maximum X-Y motorized movement	±2 mm x ±2 mm or 4 mm x 4 mm

*LAB conditions may effect performance.

Heating and Cooling

Available temperature range	4 – 80° C*
Available temperature range when paired with environmental enclosure	-20 – 80° C

*Evaporation and condensation on the sample may impact results.

Facilities Requirements

Accessory	Note	Input	Input air requirements	Water requirements
Environmental Chamber	The environmental chamber requires nitrogen supply and separate electrical power supply	100-240 VAC (2 lines)	>20 psi of nitrogen or compressed air	Distilled water
Sample Heater/Cooler	The heater coolers requires electrical power supply	100-240 VAC (2 lines)	N/A	Distilled water and ice if sub -10° C is required

Upgrades to installed nanoIR systems require modification of the instrument to accept the new accessories. This will necessitate installation time to be quoted.

The environmental enclosure and heater/cooler system are not compatible with the nanoIR first generation nanoscale IR spectroscopy system.

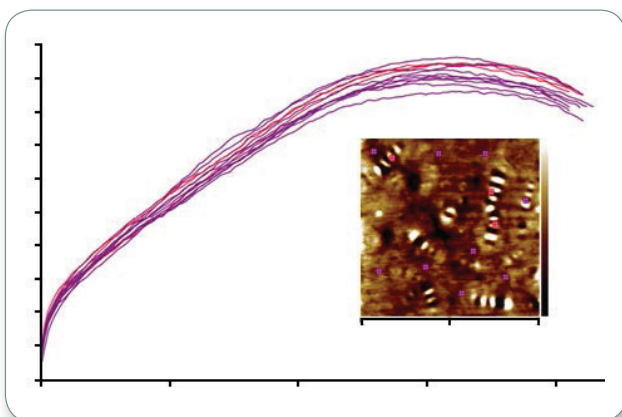


Figure 1. 10 µm x 10 µm AFM height image of asphalt and binders. The sample was first cooled to -15°C prior to nano-TA™ measurements. Glass transition of this asphalt is sub-ambient, therefore cooling via the environmental enclosure is necessary to study the transitions. Sample courtesy of Prof. Lily Poulidakos, Empa, Swiss Federal Laboratories for Materials Science and Technology.



Figure 2. Environmental Control and Heater for nanoIR2 and 3 series products.

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