


Increase your nanoIR measurement capability with humidity and temperature control capabilities

Humidity controller

Anasys Instruments' 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.

| | | | |
|--|---|-------------------------|---------------------------------------|
|  | Available humidity control range | Maximum gas flow | Maximum X-Y motorized movement |
| | 4 – 95%, non-condensing | 250 ml/min | 2mm x 2mm |

Heating and cooling

The sample heater/cooler system for nanoIR systems provides sample heating and temperature control for both AFM, **AFM-IR** and s-SNOM 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.

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

*Evaporation and condensation on the sample may impact results.

Facilities Requirements

Environmental Chamber

The environmental chamber requires nitrogen supply and separate electrical power supply.

Sample Heater/Cooler

The heater cooler requires an electrical power supply.

| | Input | Input air requirements | Water requirements |
|--------------------------------|-----------------------|---|---|
| Environmental Enclosure | 100-240 VAC (2 lines) | >20 psi of nitrogen or compressed dry air | Distilled Water |
| Sample Heater/Cooler | 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.

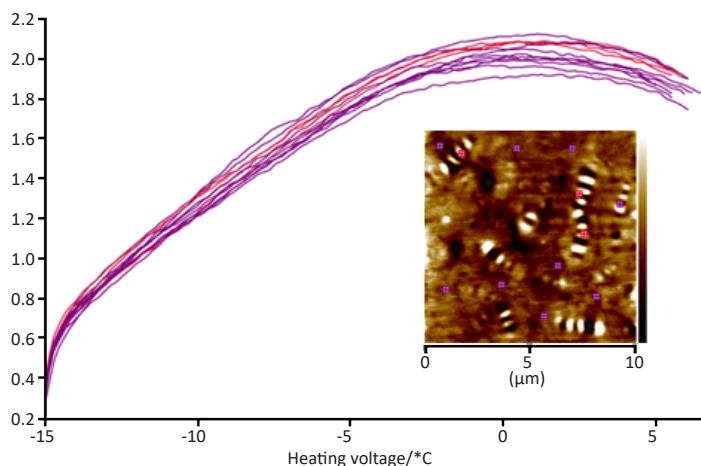


Figure: 10 μm x 10 μm AFM height image of asphalt and binders. The sample was first cooled to -15°C prior to nano-TA™ measurements. Glass transition of this asphalt is sub-ambient, therefore cooling via the environmental enclosure is necessary to study the transitions. Sample courtesy of Prof. Lily Poulikakos,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

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