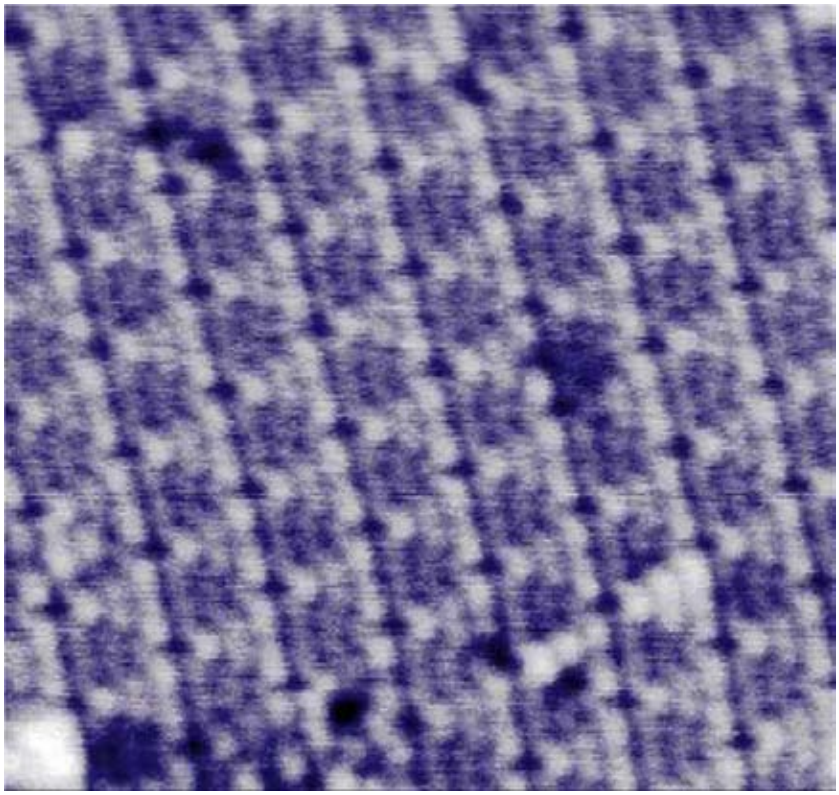
NANONIS APPLICATION NOTE

ULTRA-LOW CURRENT STM AT 100fA

Scanning at ever lower currents is an ongoing effort in the STM community. In a test run at the University of Lille, the Nanonis control system was put to test with an Omicron-1 STM to measure atomic resolution images on a Si-111 sample.

So far the record for any measurement with a Nanonis system, it was possible to see individual atoms with a setpoint of the tunneling current as low as 100fA.



Atomic resolution at a setpoint of 100fA with following scan parameters:

Scan Range:	20 nm x 20 nm
z-Range:	3 A
Setpoint I:	100 fA
Bias:	-1.5 V
Resolution:	512 x 256 pixels
Scan Speed:	2 s/line
Acquisition Time:	730 s = 12 min
Channels:	Topography, Current, fwd/bwd
Preamplifier:	Omicron STM Pre
HVAMP Gain:	4

In Collaboration with:

B. Grandidier, J.-P. Nys, IEMN, University of Lille, France

Nanonis Modules in Use:

- Base Package
- Omicron Adapation Kit
- High Voltage Amplifier 150V

System:

- Omicron STM-1

NANONIS
The SPM Application Experts

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