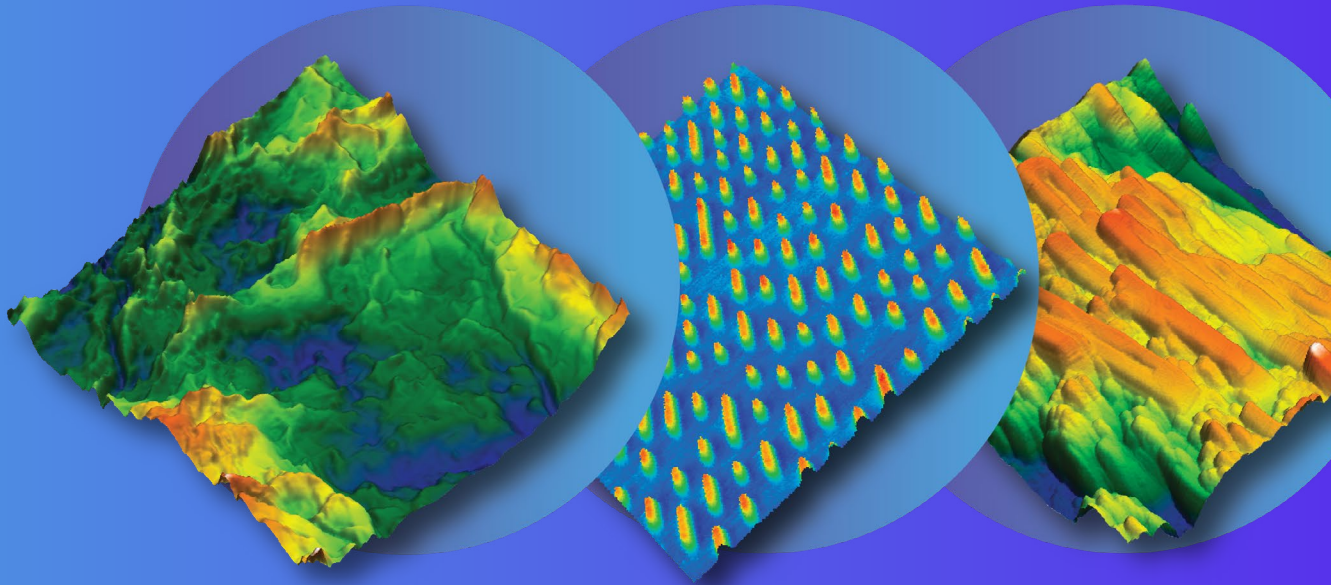


3D images with nanoscale resolution

Capture 3D images with 1,000,000x
magnification on your benchtop with
the nGauge AFM



Our Mission

ICSPI is on a mission to bring robust, easy-to-use, nanoscale metrology everywhere.

“I can attest that this technology is extremely reliable and can produce images that rival much larger and more expensive AFM systems.”

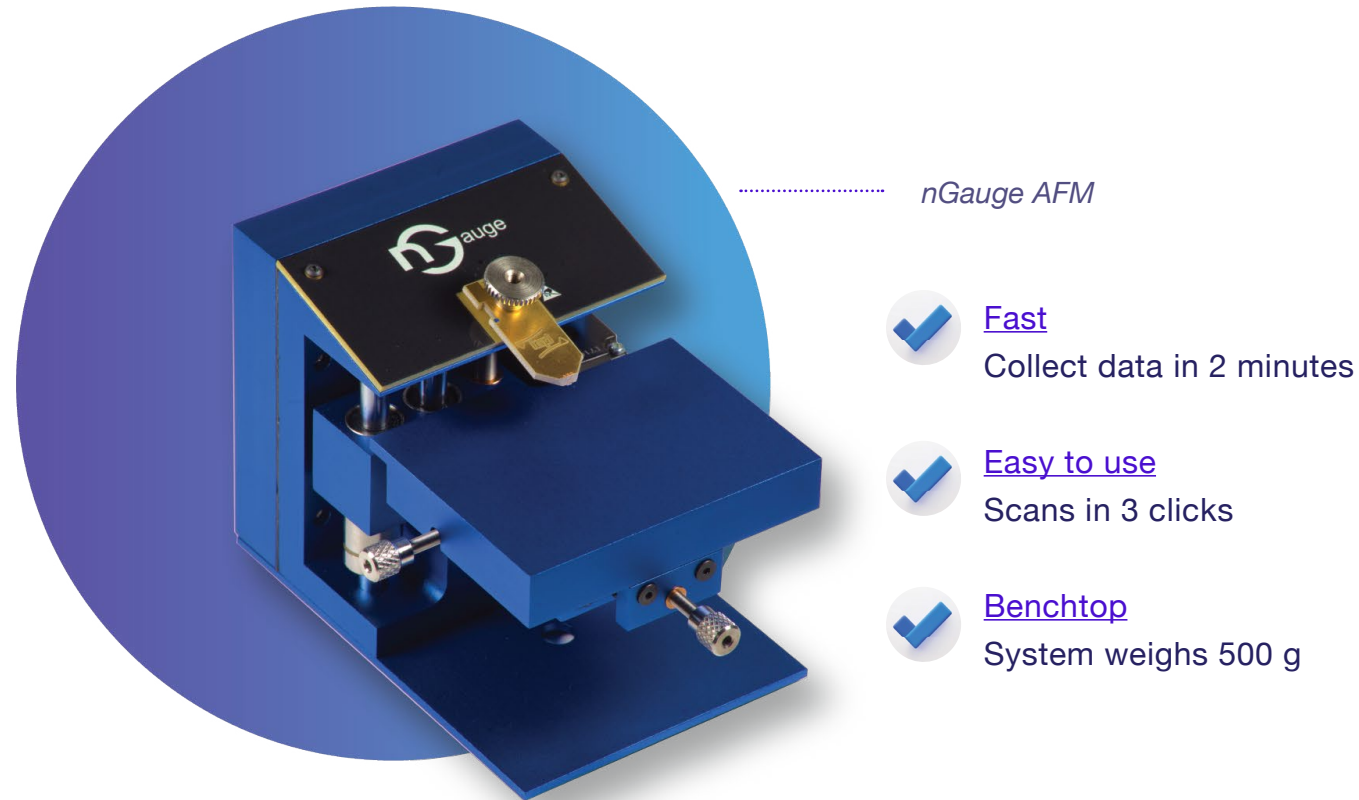
Professor Michael Cullinan
University of Texas at Austin, USA



What we do

ICSPI designs, manufactures and sells single-chip scanning probe microscopes for educational, research and industrial applications, including failure analysis and quality control.

We push the limits of what is possible in nanoscale metrology with our team of engineers of the highest calibre working on our patented CMOS-MEMS technology. ICSPI is headquartered in Kitchener-Waterloo, Ontario, Canada.



Our Story

ICSPI was founded in 2007 with the goal of bringing robust, easy-to-use, nanoscale metrology to everyone. Although technology continues to shrink faster than ever, nanoscale imaging has remained relatively inaccessible. Frustrated by the poor versatility, complexity and high costs of traditional nanoscale imaging systems, ICSPI sought to revolutionize nanoscale imaging and bring the technology to every laboratory, student and researcher.

After nearly 10 years of research and development at the University of Waterloo, Canada, with funding from DARPA and the Ontario Research Fund, ICSPI commercialized the world's first single-chip atomic force microscope (AFM). Launched in 2017, our flagship product—the nGauge AFM—has reset the expectations for AFM and nanoscale metrology: all of the scanners and sensors have been integrated onto a single 1 mm x 1 mm CMOS chip, dramatically simplifying the operation of nanoscale metrology instruments.

The nGauge AFM is trusted by researchers, scientists and engineers at universities, government institutes, and by companies of all sizes, from startups to the largest companies in the world. The nGauge is also used by educators for teaching the next generation of students from high school to graduate school in over twenty countries.

Patented AFM-on-a-chip Technology

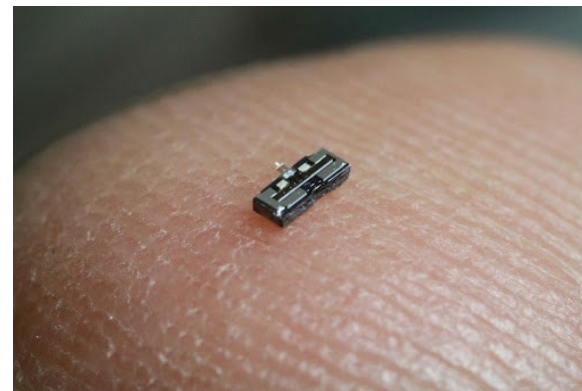
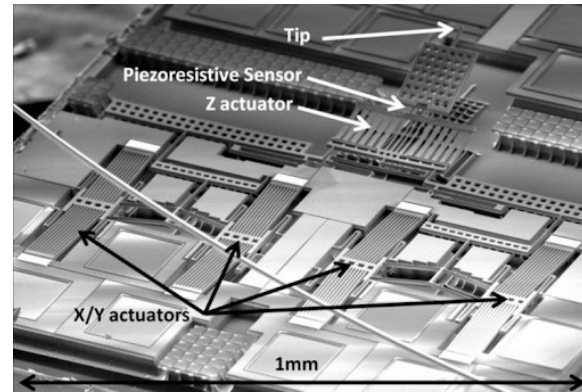
AFM-ON-A-CHIP

The nGauge AFM is a laserless system: the integrated piezoresistive sensor allows for alignment-free operation and a fully automatic approach – so you can collect your data effortlessly.

All of the sensors and scanners of traditional AFM instruments have been integrated onto a single 1 mm x 1 mm chip.

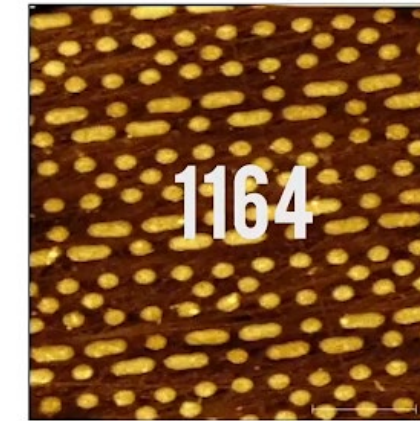
“We have been blown away by its performance, ease of use and portability. The tool easily saves us several thousand dollars a month in AFM usage fees at third-party labs.”

Dr. Michael Helander, CEO
OTI Lumionics, Canada



Long Lifetime

nGauge AFM tips are made of hard, durable materials like diamond-like carbon and aluminum oxide, which maximize lifetime, making hundreds or thousands of scans possible with each chip.



nGauge Specifications

Scanning

Scan types	Topography, Phase
Scan size	20 μm \times 20 μm
Scan size (25 stitched)	100 μm \times 100 μm
XY Scanner Resolution	<0.5 nm
Vertical Scan Range	10 μm
Noise floor	<0.5 nm

Resolution and Speed

Quick scan	16 sec
Routine scan	80 sec
High-resolution scan	5 min
Max resolution	1024 x 1024 pixels

Samples

Max sample size	100 mm x 50 mm x 20 mm
Max sample weight	1 kg



Comparison

	nGauge AFM	Traditional AFM	SEM
Operations in air	✓	✓	X
Automatic approach	✓	X	N/A
Install time	5 min	1–2 weeks	1–2 weeks
Time to data	2 min	1 hr	30min–1hr
Cost	\$	\$\$\$	\$\$\$\$
Cost per scan	\$	\$\$	\$\$
Benchtop operation	✓	X	X
Training time	1 hr	12+hrs	12+hrs
Laser/beam alignment-free	✓	X	X
Regular power and USB	✓	X	X
Easy to handle probes	✓	X	N/A
Maintenance-free	✓	X	X
3D images	✓	✓	X
Sub-nanometer resolution	✓	✓	X
Non-conductive samples	✓	✓	X

Trusted by hundreds of researchers world-wide



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Materialforschung
und -prüfung



大阪大学
OSAKA UNIVERSITY

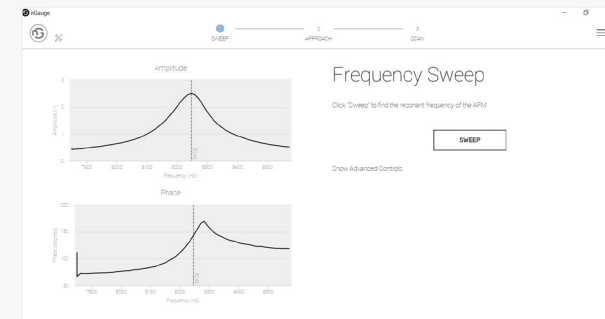




3d nanoscale scans in 3 clicks

1. Automatic Sweep

One-click automatic frequency sweep completes in five seconds



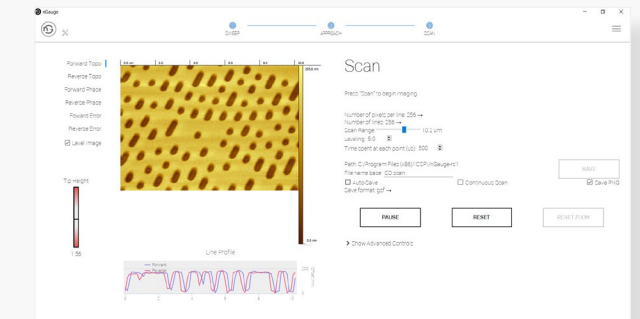
2. Automatic Approach

One-click automatic tip-sample approach completes in ten seconds



3. Fast Scanning

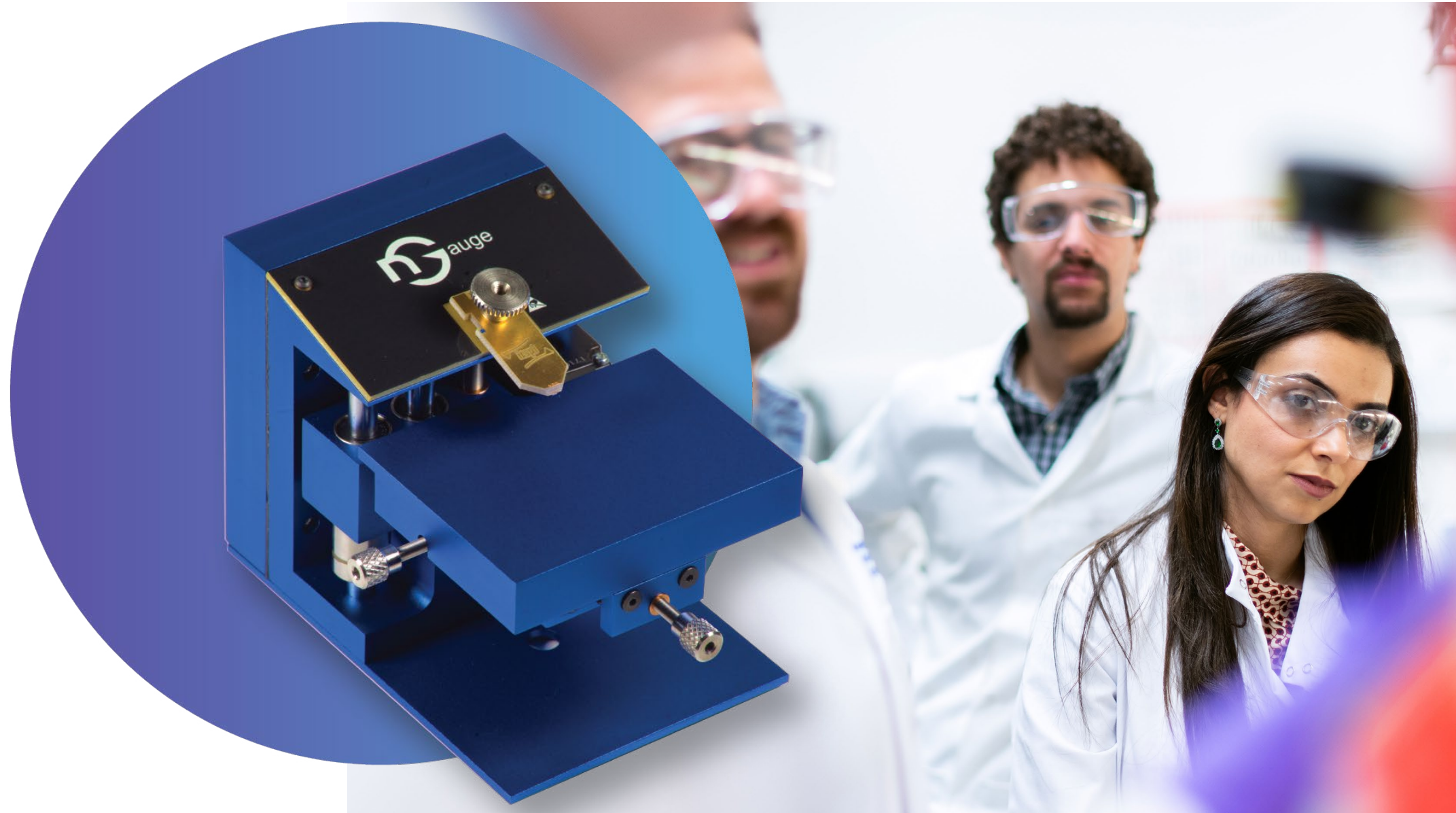
Capture routine scans in just over a minute



nGauge AFM

Reveal insights at the
nanoscale on your
benchtop.

icspi



icspi

icspicorp.com

The logo for Prager Elektronik features a stylized green 'P' symbol to the left of the company name. 'Prager' is written in a green serif font, and 'Elektronik' is written in a black serif font below it.

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