Enabling Atomic-Resolution AFM in Ambient Conditions

Advancing Reliable Atomic-Scale Imaging with Park NX1

The Challenge

"Achieving atomic resolution outside ultra-high vacuum required overcoming noise, drift, instability, and the limitations of custom-built systems. We needed stability, reliability, and ease of use."

— Prof. Franz J. Giessibl, Experimental & Applied Physics

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Universität Regensburg

Your Challenge, **Our Solution**

Park NX1



This case study is based on an interview with Prof. Franz Giessibl at University of Regensburg, discussing the development of atomic-resolution AFM and the Park NX1 platform.

Park SYSTEMS

Park NX1

Customer Success Story

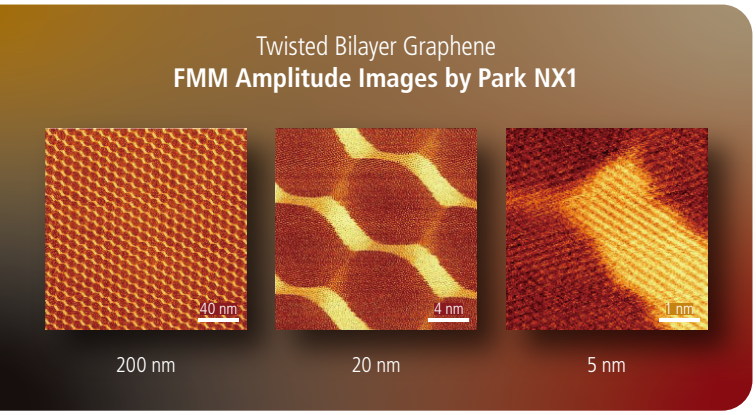
Universität Regensburg



The Solution

Compact & Ultra-Stable Design
Minimizes noise and vibration for reliable atomic-resolution imaging under ambient conditions

User-Friendly & Reliable Operation
Combines long-term stability with practical operation in a commercial AFM platform



qPlus® Sensor Compatibility
Supports ultra-sensitive force detection using small oscillation amplitudes for atomic-scale measurements

From Research to Product
Transforms advanced AFM research into a robust and reproducible commercial system

The Results

Atomic Resolution in Ambient Conditions
Enabled stable atomic-scale imaging outside ultra-high vacuum

Low Noise & High Stability
Improved measurement reliability through optimized mechanical design

Expanded Research Capabilities
Enabled studies of: corrosion, electrochemistry, 2D materials, and nanoscale surface interactions

Sub-Ångström Resolution
Achieved ultra-high lateral and vertical measurement precision

"Park Systems was able to take laboratory concepts and implement them in a robust, practical way."

— Prof. Franz J. Gießibl



