



*The Technology  
Leader in  
Scanning Probe  
and Atomic Force  
Microscopy*

# Asylum Research – Innovation and Support to Help You Be a Leader in Your Research Field

Asylum Research is the technology leader in atomic force and scanning probe microscopy (AFM/SPM) for both materials and bioscience applications. Founded in 1999, we are an employee-owned company dedicated to innovative instrumentation for nanoscale imaging and measurement. Asylum Research has an extensive worldwide installed base of leading researchers in academia, government, and commercial labs.



With over 250 years combined AFM/SPM experience from our scientists, engineers and software developers, our award-winning products and legendary product and applications support enable our users to lead the way in nanoscience and nanotechnology research. Since our founding, Asylum Research has been the leader in performance, innovation, quality, and service – a position we maintain through aggressive investment in research and development.



The Asylum Research Team

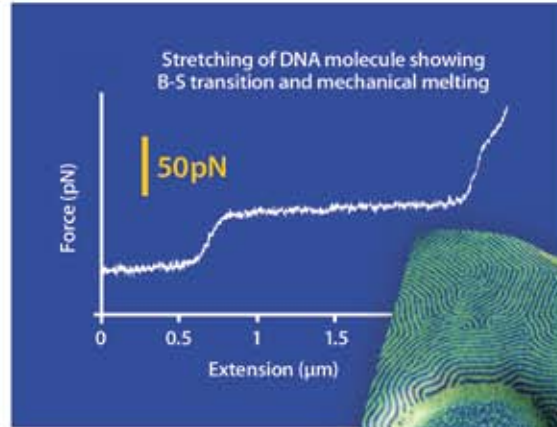


# AFMs for Novices and Power Users – No Limits

With easy setup and application-ready parameter sets, novices get up and running quickly – and at the same time, our AFMs offer superior capability, flexibility, and an open software environment to enable the most advanced users to push the state of the art. Our customers apply our AFMs to a wide variety of nanoscience applications:

- **Physics and Chemistry**
- **Biomaterials/Biophysics**
- **Molecular and Cell Biology**
- **Polymers including Localized Thermal Analysis**
- **Food Science**
- **Magnetics and Data Storage**
- **Photovoltaics/Solar/Energy Research**
- **Electrical Characterization**
- **Piezoelectrics and Ferroelectrics**
- **Single-Molecule Force Measurements**
- **Nanoindenting**
- **General Materials and Surface Characterization Applications**  
Semiconductors, optics, thin films/coatings, ceramics, colloids, cosmetics, geological and environmental samples, and many more.

Asylum's product line offers advanced imaging and measurement capabilities to reveal the characteristics and intricacies of your samples, including Dual AC™ mode for enhanced image and property contrast, iDrive™ for easy imaging in fluids, Q-control, electrical characterization (CAFM, SKFM, EFM), high voltage piezoresponse force microscopy (PFM), magnetic force microscopy (MFM) including our unique Variable Field Module, quantitative nanoindenting, nanomanipulation, and a wide range of environmental accessories and application-ready modules.



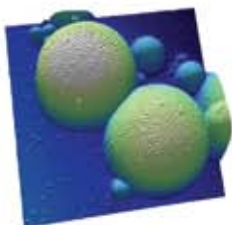
# The MFP-3D™ AFM Family

## Power, Performance and Versatility

Asylum's MFP-3D family sets the standard for AFM technology with unprecedented precision and flexibility. The MFP-3D is the first AFM with true independent piezo positioning in all three axes, combined with our patented low noise closed-loop sensor technology. The ground-breaking all-digital ARC2™ controller ensures the lowest noise, fastest operation and greatest system flexibility. Designed for versatility and expandability, the MFP-3D family offers an extensive suite of system, environmental, and application options to enable our users to broaden and enhance the capabilities of our AFMs.

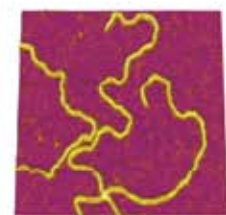
**MFP-3D Stand Alone™ AFM provides the widest range of AFM/SPM capabilities available today.**

It is ideal for general materials science applications ranging from polymers to photovoltaics and from physics to chemistry. Both top and bottom optical sample viewing are available for easy analysis of both opaque and transparent samples. Its closed-loop positioning system provides exceptional resolution, accuracy and reproducibility, and its low-coherence light source virtually eliminates interference artifacts. As for all our systems, nanolithography capability is included standard.

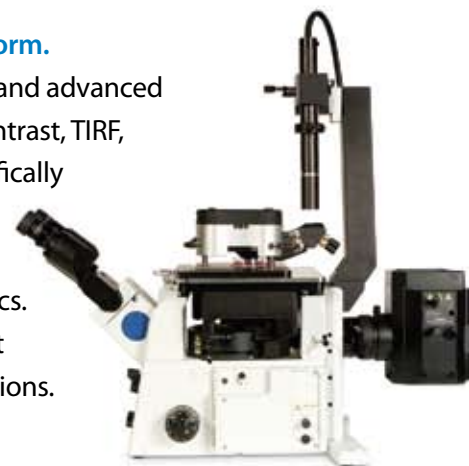


**MFP-3D-BIO™ AFM is the only full-capability AFM on an inverted optical platform.**

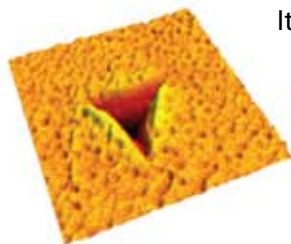
It is optimized for life science applications with uncompromised AFM capability and advanced integration with optical imaging techniques, such as epi-fluorescence, phase contrast, TIRF,



FLIM, and Raman spectroscopy. The MFP-3D-CF™ is specifically optimized for confocal platforms. The MFP-3D-BIO provides the lowest noise, most sensitive, and most accurate measurements for force curves and cell mechanics. Its large Z range (up to 40µm) enables force curves on soft materials, imaging of cells, and other challenging applications.



**MFP NanoIndenter is a true instrumented nanoindenter and is the first AFM-based system that does not use cantilevers as part of the indenting mechanism.**



Its vertical indenter mechanics and state-of-the-art AFM sensors provide substantial advantages in accuracy, precision, and sensitivity relative to other AFM-based and traditional nanoindenting systems.





# The Cypher™ AFM

## The World's Highest Resolution AFM

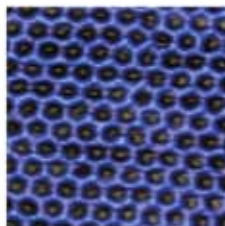
Asylum's Cypher AFM is the industry's first new small sample AFM in over a decade, setting new standards for resolution, stability, control, and modularity. Cypher achieves closed-loop atomic resolution using patented sensor technology for all three axes, combining the accuracy and control of closed loop with the resolution of open loop for the most accurate images and measurements possible today.



Cypher also sets the new standard for ease of use with its ground-breaking, fully automated SpotOn™ laser and photodetector alignment system.

Additional capabilities include interchangeable light source modules that allow laser spot sizes down

to 3µm for broad application and scan mode flexibility, and support for high-speed AC imaging and sub-pico Newton force measurements with small cantilevers. The system includes an integrated enclosure which provides acoustic and vibration isolation, as well as thermal control for excellent image and measurement stability.



Cypher is the first new small sample AFM in over a decade and provides the highest resolution and most accurate images and measurements possible today.

## What Users Are Saying About Asylum Research

### **On MFP-3D:**

Jeremy Levy, Univ. of Pittsburgh  
"I am very happy with my choice of AFM. Asylum support is amazing. You can talk directly to the scientists and engineers – there is no barrier. Definitely if I were going to buy another AFM it would be an Asylum."

Sergei Kalinin, Oak Ridge Nat'l Lab  
"Asylum's MFP-3D is a powerful and highly flexible system that makes your daring experimental ideas come true."

### **On Cypher:**

Bryan Huey, Univ. of Connecticut  
"Our new Cypher system is exceptional in terms of performance, automation, imaging speed and ease of use. I'm already recommending Cypher to my AFM colleagues."

Andras Kis, EPFL (Switzerland)  
"Cypher is by far the best, most stable and most configurable AFM I have ever used."

### **On Asylum Service and Support:**

Scott MacLaren, Univ. of Illinois (UIUC)  
"Many companies say they provide great service and support, but fail to do so. Asylum Research, on the other hand, proves every day how much they care about their customers by providing the best service and support in the industry. Truly exceptional."

Sonia Contera, Oxford University  
"We use Asylum Research AFMs for their great resolution and precision and for the pleasure of dealing with such knowledgeable and helpful customer support."

Bryant Chase, Florida State University  
"Your tech support staff has been great in helping us get the best possible data. They are definitely willing to go the extra mile."

Esra Roan, University of Memphis  
"I think what makes Asylum such a good company is the service that you provide. I have never had this kind of luck with [competitor] and I am very pleased we have now chosen to go with Asylum."

Ask us for references for your specific application.

# Superior Products *and* Support – We Guarantee Your Success

Asylum Research is dedicated to making our users successful by providing the highest quality products. In addition, Asylum is recognized worldwide for the AFM industry's highest level of product and applications support. That's why we can offer the best customer protection plan in the industry.

**Every Asylum Research AFM/SPM comes with our exclusive 2-year warranty and 6-month money-back guarantee.**

If for any reason you decide to return your MFP-3D or Cypher system, we'll give you your money back, no questions asked. We also include a two-year bumper-to-bumper warranty on every AFM we build. In the unlikely event that anything goes wrong, we'll fix it at no charge and get you up and running quickly.



**With our scientists and applications staff around the world, support is just a phone call away** – no charge for the call, no charge for the answer. In addition to our Support, Applications, and Quality Assurance Groups, our entire technical staff actively contributes to our efforts to make you successful. We also offer our unique OnSight Remote Support that lets us view, control and diagnose your AFM over the internet. And, with over 1300 active members, our On-line User Forum has up to the minute questions, answers, discussion and updates. Plus we provide regularly scheduled training courses to help you hone your skills.

**Above:** Asylum scientists Jean Jarvaise, Anil Gannepalli, and Sophia Hohlbauch confer on a customer support call.

**Right:** Product manager Mario Viani and co-founders Roger Proksch and Jason Cleveland brainstorm AFM design.





Applications scientist Jason Li (right) discusses the physics of phase imaging during customer training at our Santa Barbara headquarters.

**The Asylum Research Team protects your investment by continually developing new and innovative products and providing an upgrade path to our latest technology.** Our close relationships and collaboration with our customers fuel continuing product improvement. To make sure you are never left behind, all software updates and enhancements are distributed free of charge.



Asylum Research Santa Barbara Headquarters

## Seek Asylum for Your Next AFM!

Six-month money-back guarantee, two-year bumper-to-bumper parts and labor warranty, upgradability, free software updates, customer training courses, our on-line User Forum, and free phone, email, and OnSight support from the best and most experienced applications scientists and engineers in the industry. All this plus the highest quality, most productive and reliable products add up to the lowest cost of ownership of any AFM. We protect your investment like no one else.



Experience Asylum's superior performance, innovation, quality, and service.

***Let us help you be a leader in your research field.***

## The Lowest Cost of Ownership of any AFM

- Superior productivity through system reliability, ease of use and exceptional data quality
- Exclusive six-month money-back satisfaction guarantee insures your investment
- Industry-best two-year bumper-to-bumper warranty
- Hardware modularity and upgradability
- Full software capabilities for every scanning technique – unlike competitive systems, there are no additional software modules to buy
- Free software updates and support so you get the latest developments
- Free Asylum software for off-line data analysis (requires Igor Pro)
- Free OnSight Remote Support so we can view, control and diagnose your AFM over the Internet
- Free On-Line User Forum for up-to-the minute tips and solutions
- Regularly scheduled training courses to help you hone your skills
- The finest applications and technical support anywhere with the fastest response and solution turnaround
  - < 8 working hrs average response time
  - < 24 hrs average solution/diagnosis time
  - < 48 hrs average in-factory repair/replace time with no admin fees



## Offices Worldwide

Asylum Research has offices worldwide to help you select the right AFM system for your research. For the representative in your region, see below or visit us at [www.AsylumResearch.com](http://www.AsylumResearch.com) or email to [Sales@AsylumResearch.com](mailto:Sales@AsylumResearch.com)

### North America and Worldwide Sales

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Cover image: Closed loop AC mode image of (010) cleavage plane of a gypsum crystal after brief exposure to water. Steps are 0.75nm high.