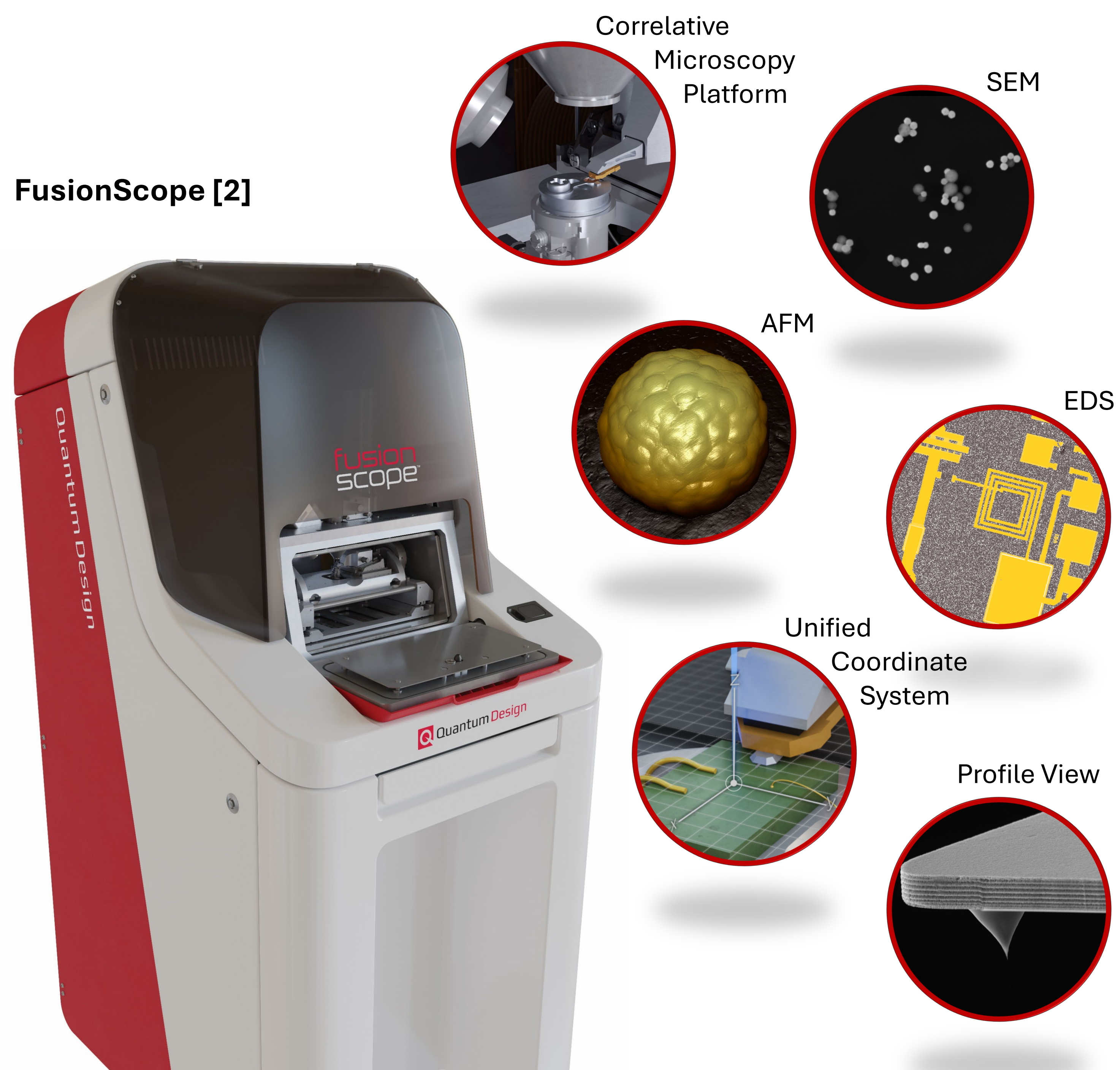
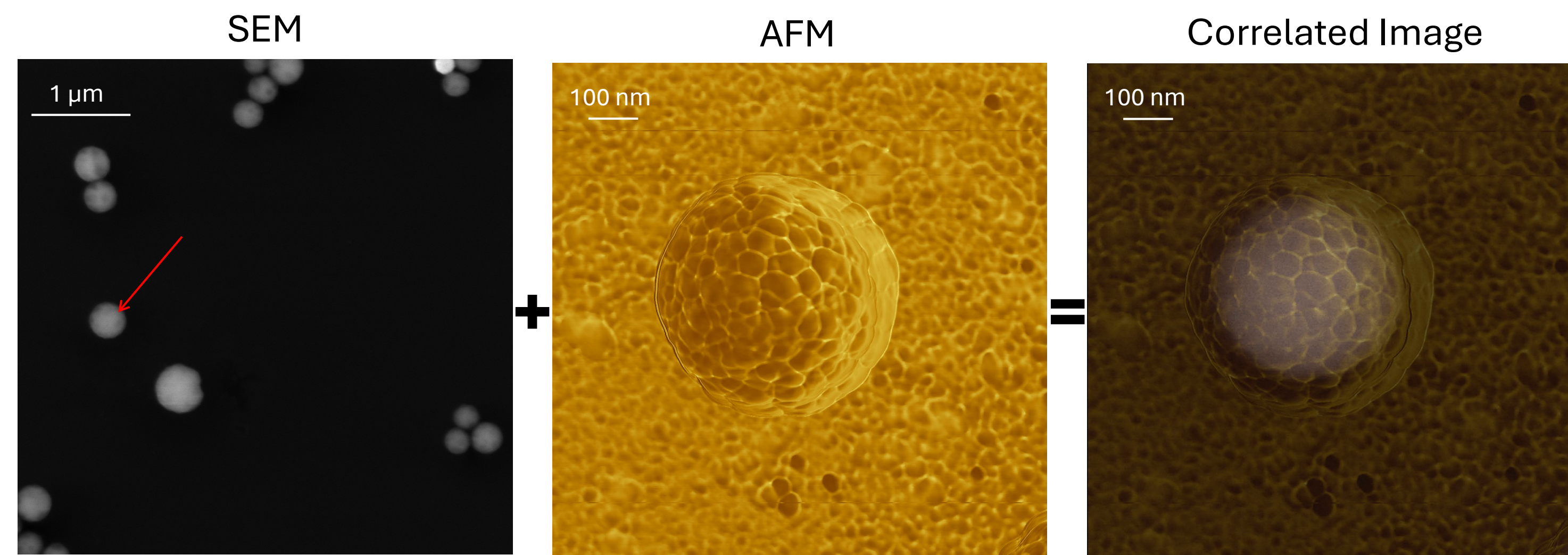


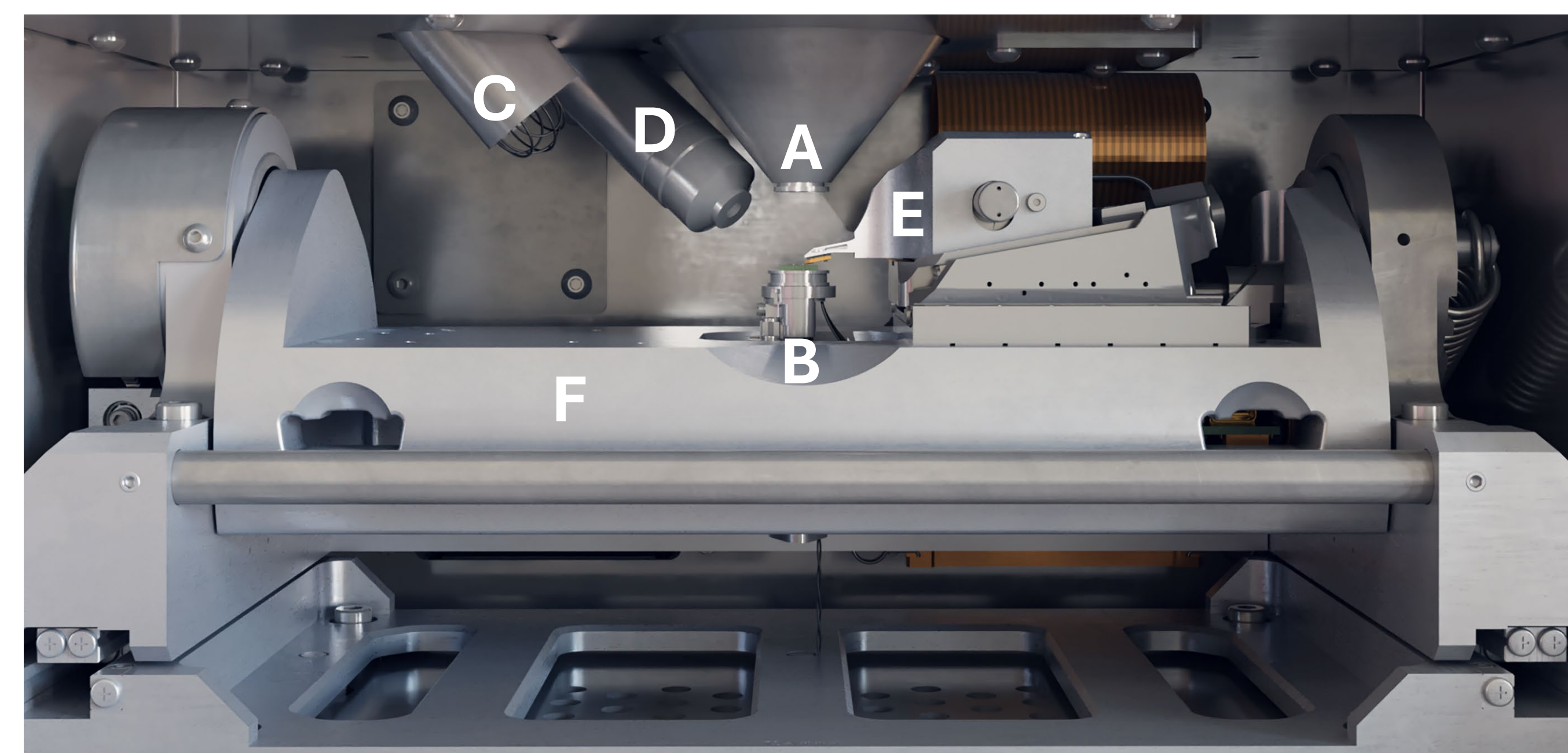
Introduction

In-situ correlation of AFM-SEM techniques implemented in a highly integrated tool offers the complementary strengths of two different imaging modalities without the complications of sample transfer [1].



Let's Take a Look Inside

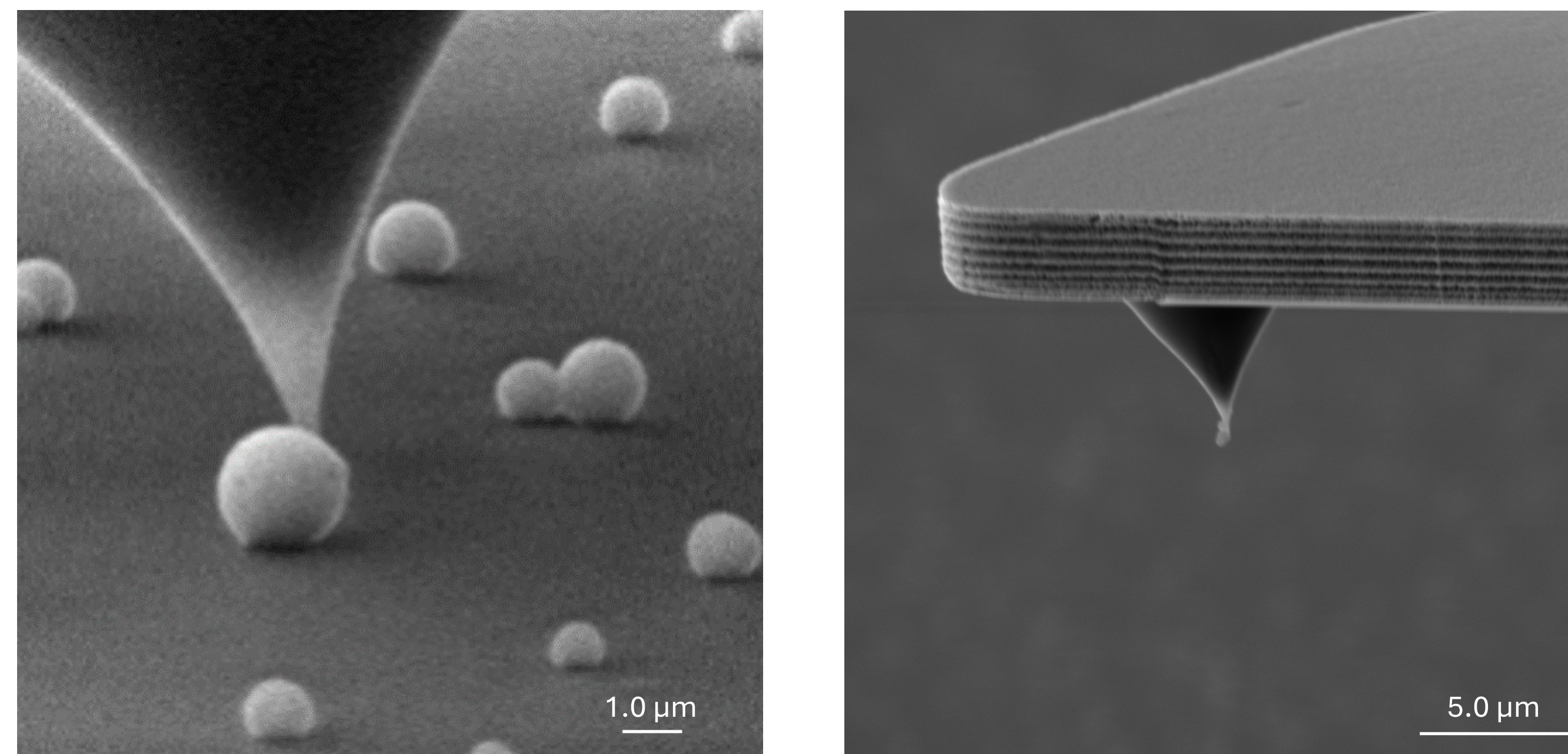
A) SEM column, B) Sample, C) E-T detector, D) EDS, E) AFM, F) Trunnion tilt stage



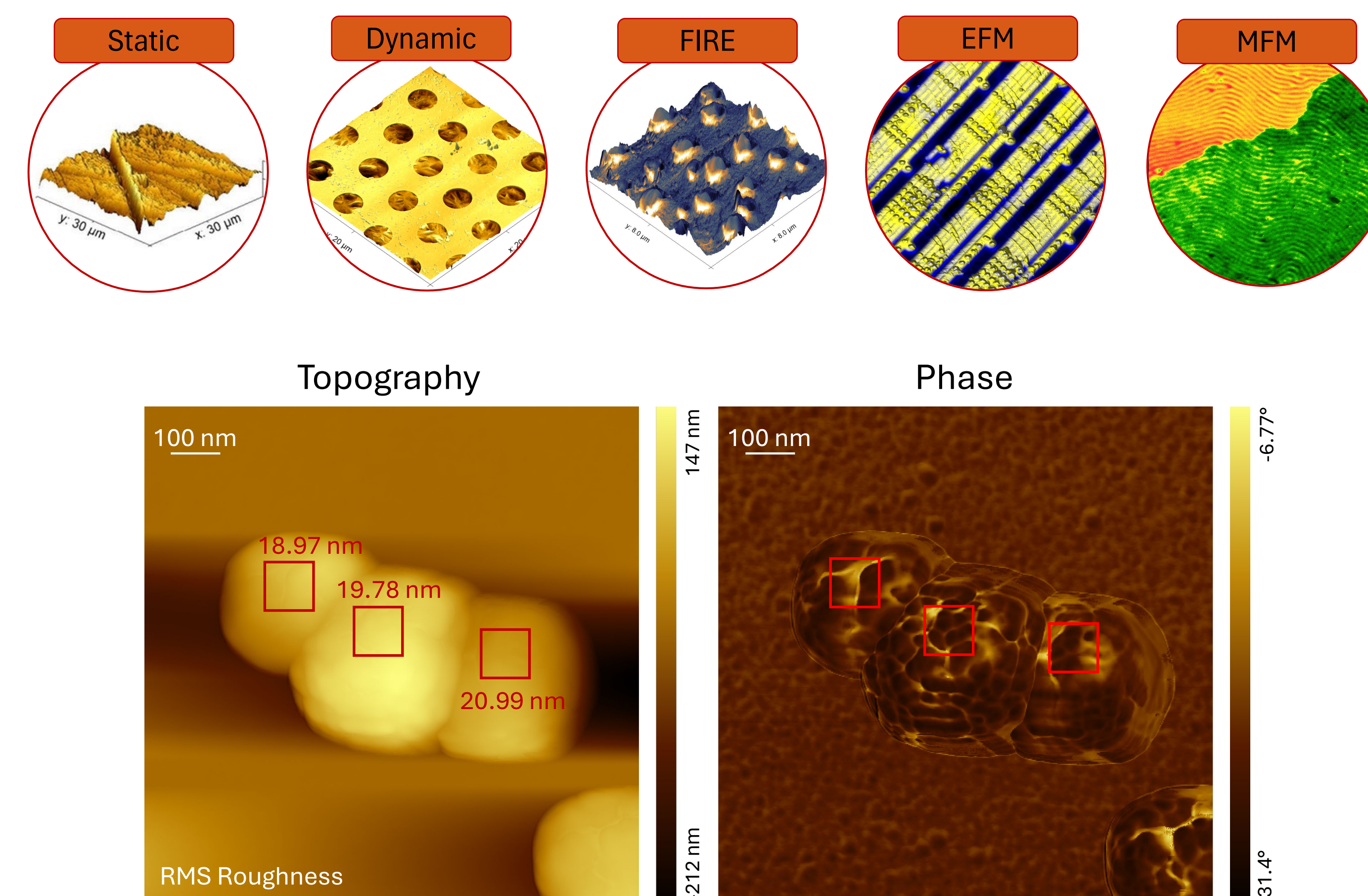
Additional ports for extensions such as nanomanipulators.

Profile View

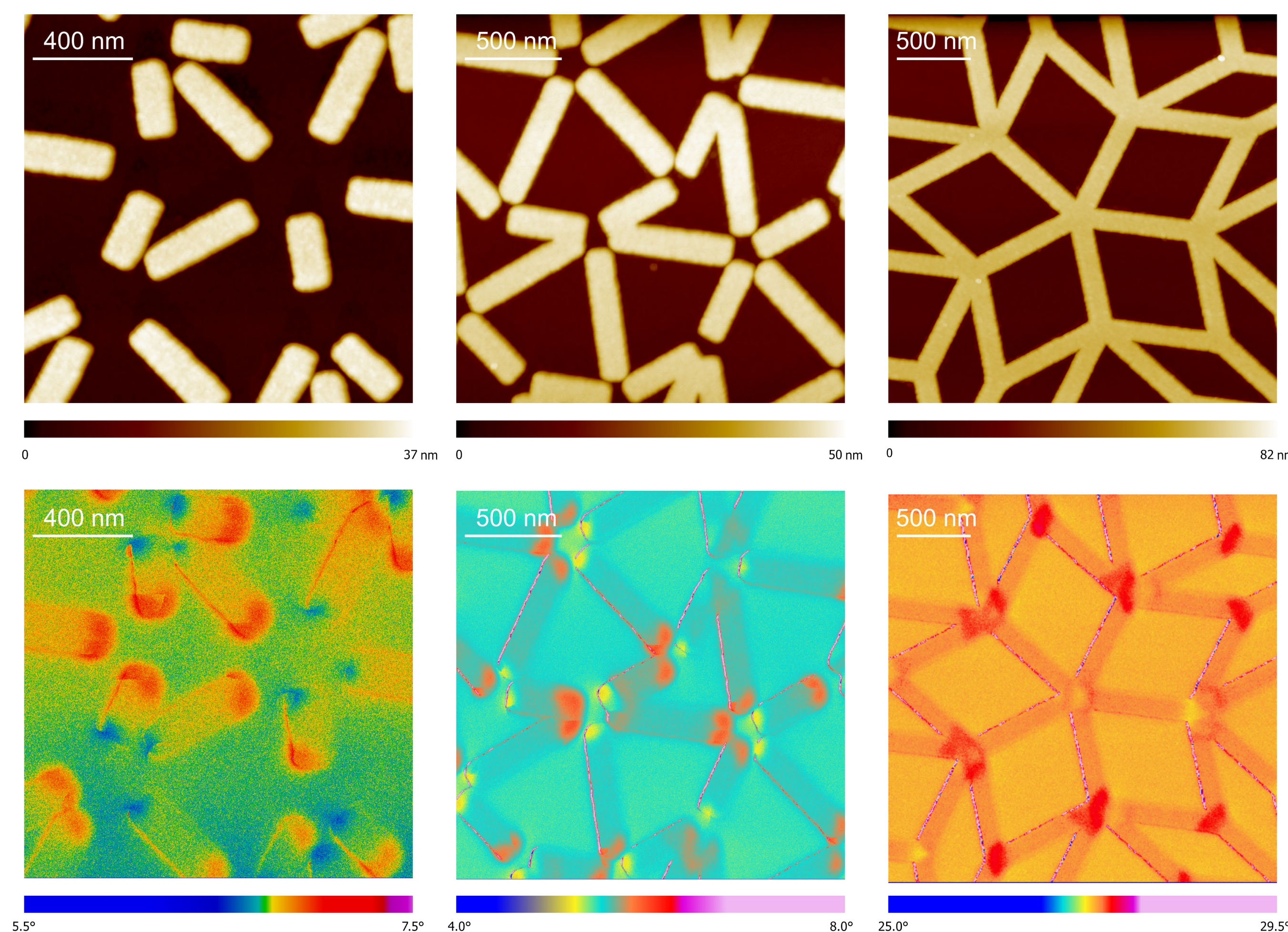
One of the unique features of the FusionScope is Profile View, where it is possible to observe the tip of the AFM cantilever as it carries out measurements.



Scanning Probe Measurement (SPM) Modes

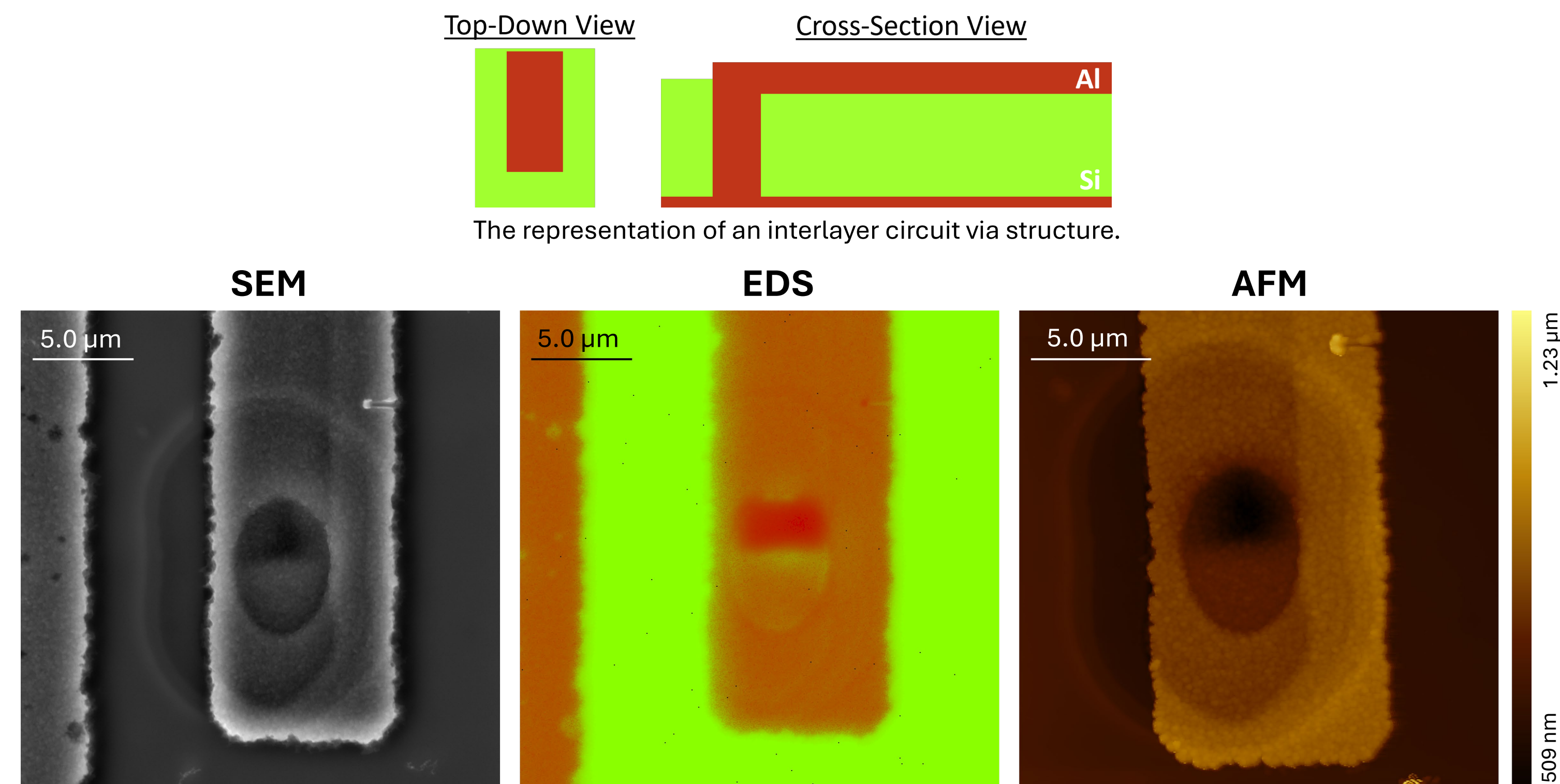


MFM on Ni₈₁Fe₁₉ Nanorods

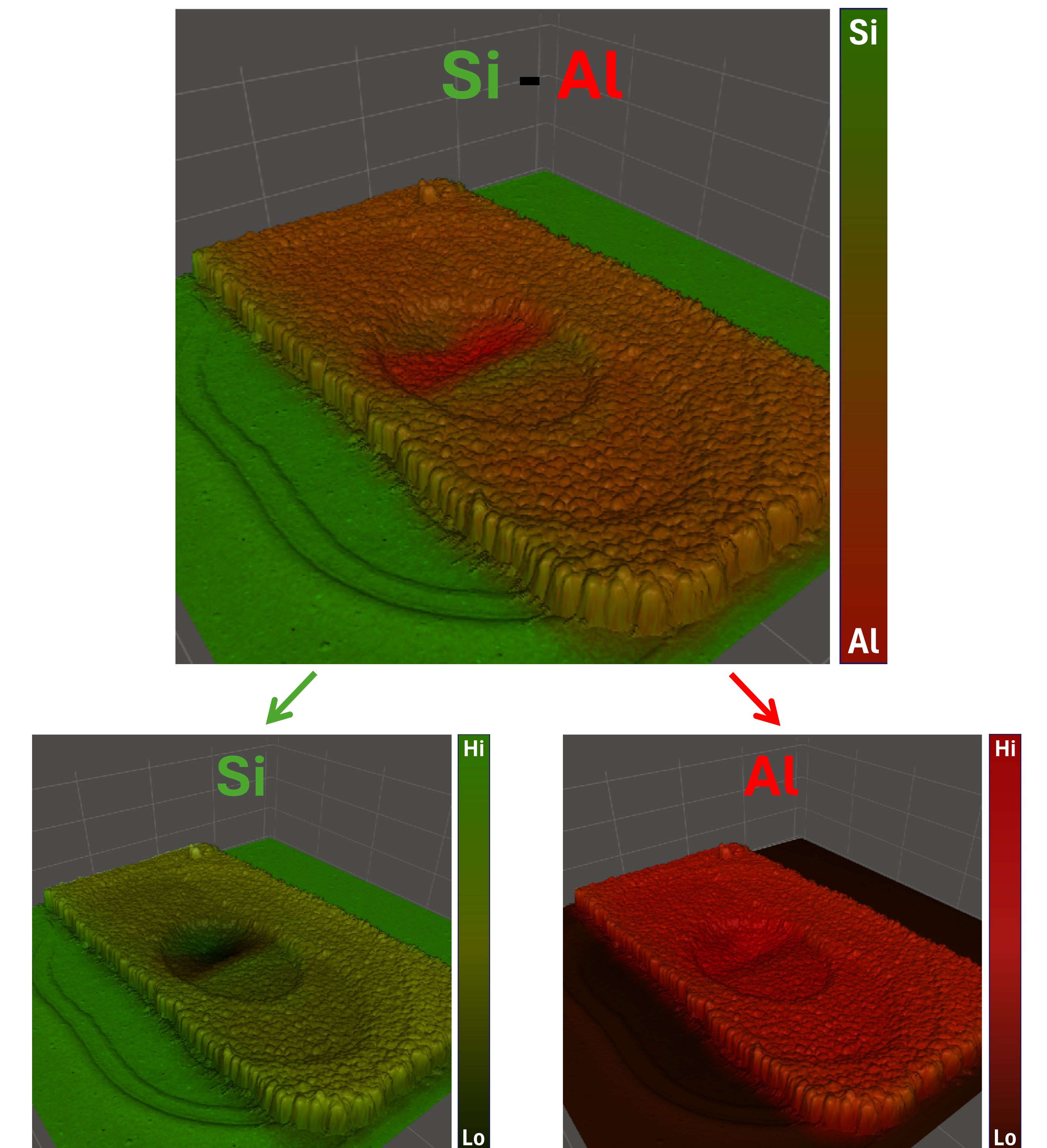


AFM-SEM-EDS

- Localized elemental information with high-resolution lateral and vertical topographical information
- Enhanced hardware and software integration with the other imaging modalities.



Si and Al channels are superimposed onto a 3D representation of the AFM topography image



Conclusions:

- The integration of the X-ray detector adds a significant capability to analyze diverse range of materials such as metals, alloys, ceramics, and polymers.
- Integration of AFM, SEM, and EDS enables researchers to obtain in-situ correlation of high-resolution lateral and vertical topographical information with localized elemental information without the complication of sample transfer.
- FusionScope's unique Profile View feature allows monitoring of tip quality and the tip-sample interaction, enhancing precision in measurements.
- Enhanced hardware and software integration significantly improves the user experience by simplifying operations and increasing efficiency.
- The versatile design allows further extensions of the platform

References:

- [1] A. Alipour et al., Microscopy Today 31 (2023), p. 17-22. doi: 10.1093/microt/qaad083
 [2] "FusionScope by Quantum Design," Open a world of easy-to-use correlative microscopy,

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