

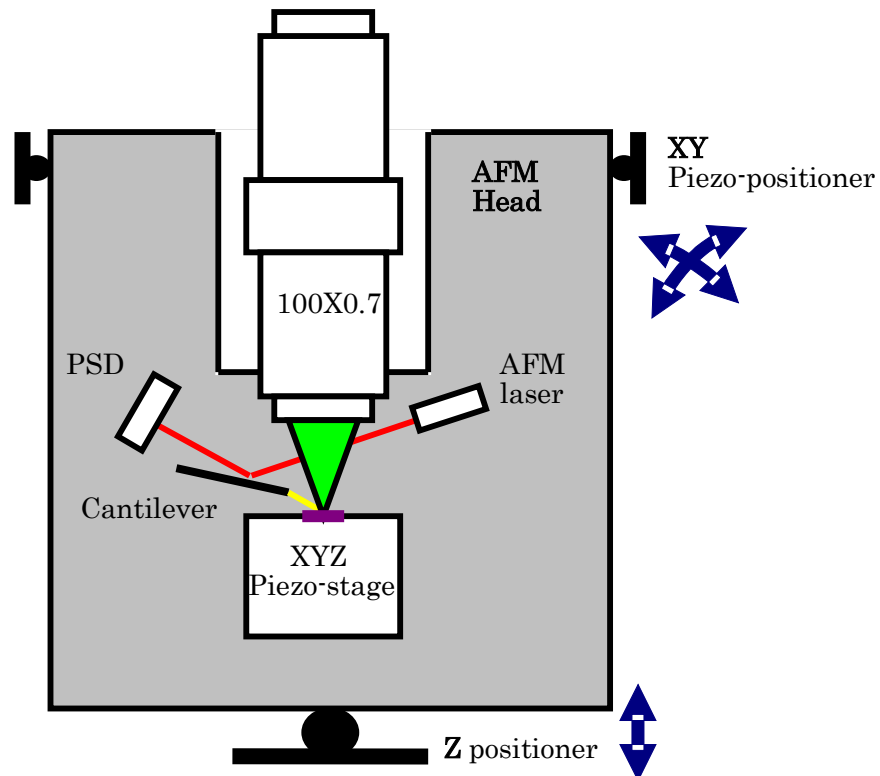
Nanofinder[®] 30 - SmartSPM[™] 1000

Confocal Raman / AFM combined system

Joined development by Tokyo Instruments, Inc. and AIST-NT

TERS (Tip Enhanced Raman)

«Reflection Geometry»



Important features:

- Closed-loop XY & Z piezo-positioner for AFM head (fine scanning and positioning of AFM head to bring laser spot on AFM tip apex);
- Sample scan with XYZ piezo-stage (with simultaneous AFM topography & Raman spectroscopy data acquisition).

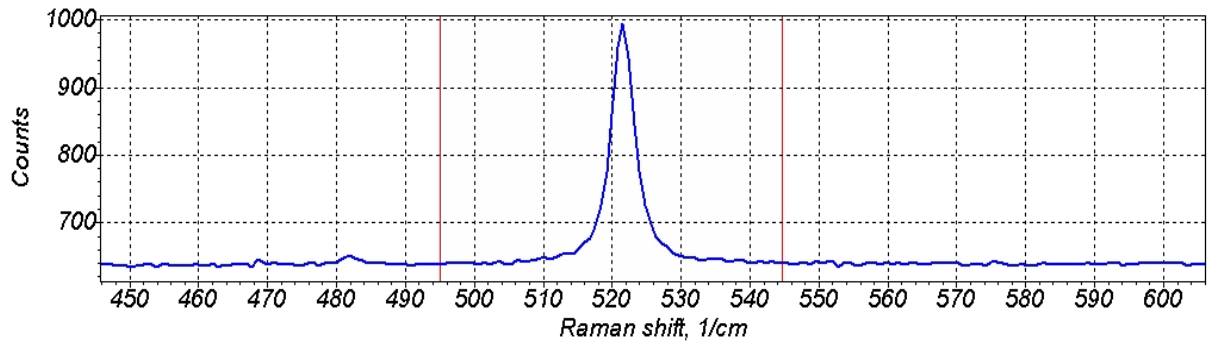
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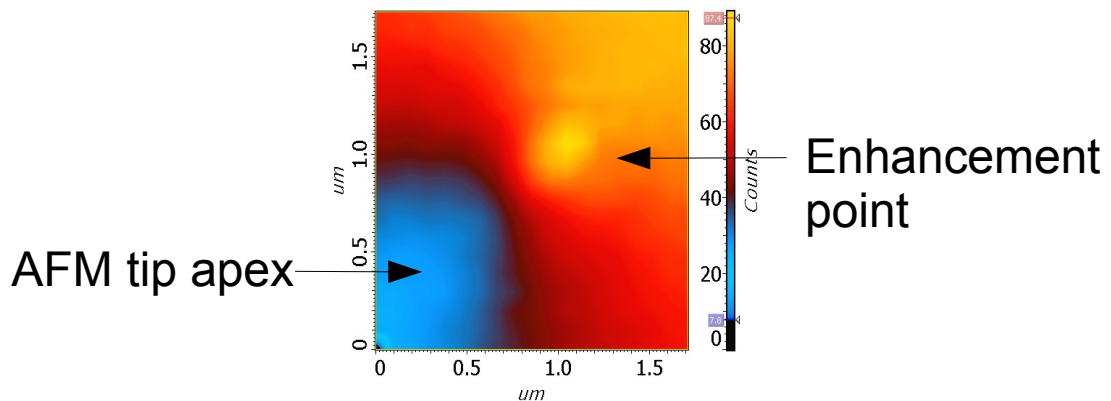
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TERS (Tip Enhanced Raman) «Reflection Geometry»

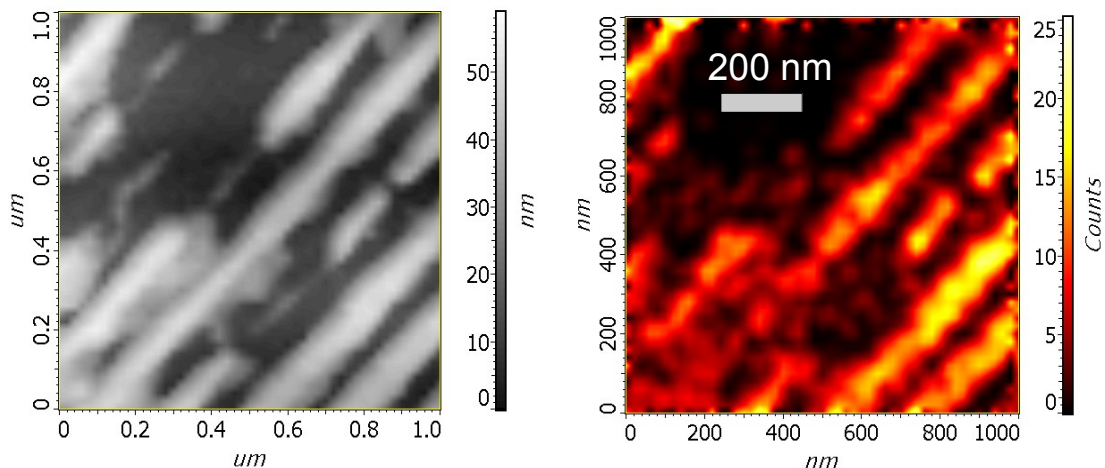
Raman spectrum (sample — Si wafer)



Mapping by AFM Head XY piezo-positioner with Si line at 520 cm⁻¹ imaging (for fine AFM tip apex — laser spot positioning).



Mapping by XYZ piezo-stage. Sample — Si/SiO₂ Line&Space 80 nm.
AFM topography TERS at 520 cm⁻¹ (Si line)



* Data obtained with DEMO system at TII office (Tokyo)

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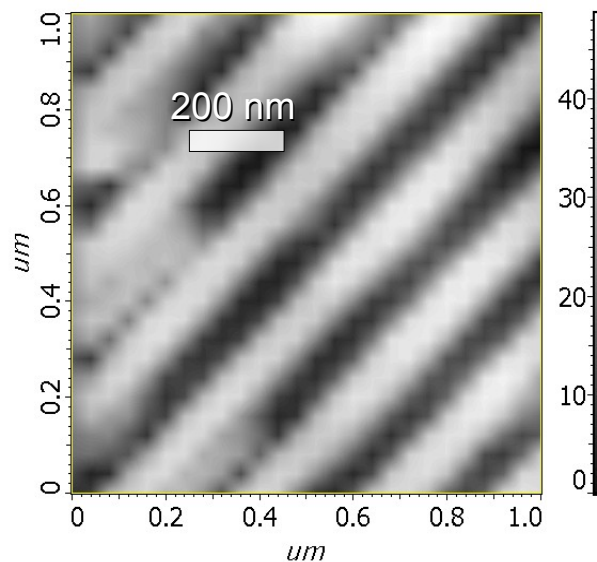
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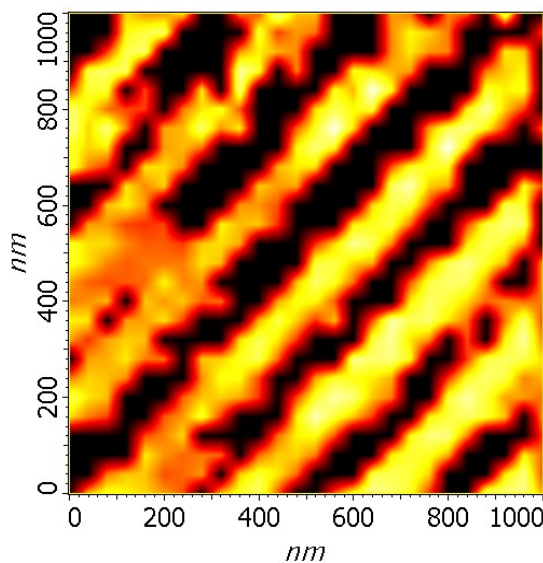
Sample — Si/SiO₂ Line&Space 100 nm

Simultaneous AFM topography, TERS intensity and Raman Shift images.

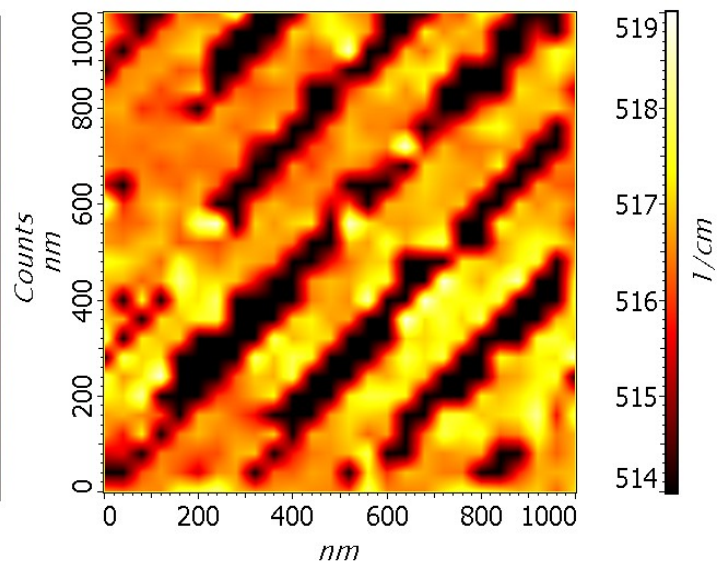
AFM topography



TERS intensity image at 520 cm⁻¹



TERS Raman Shift image



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