

KAWAKATSU LAB.

[Coupling to the nano regime]

Centre for International Research on MicroNano Mechatronics

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Applied Scientific Instruments

Precision engineering department

Coupling to Nano

Touching the untouched, and seeing new landscapes of familiar objects

Detection of the vibration of small objects tell us about their mass and the field in which they are placed. Atomic Force Microscopy is one example. We are investigating various detection and control methods of vibration of micro to molecular level objects, with the main objective of implementing novel microscopy.

- ◆ Liquid AFM – Succeeded in imaging ice-like structuring at room temperature
- ◆ Colour AFM – Mapping Morse parameters realtime in colour
- ◆ FIM/Atom Probe – Towards measurement of vibration of nanocantilevers
- ◆ TEM/AFM – Characterization of 3D nanometric objects

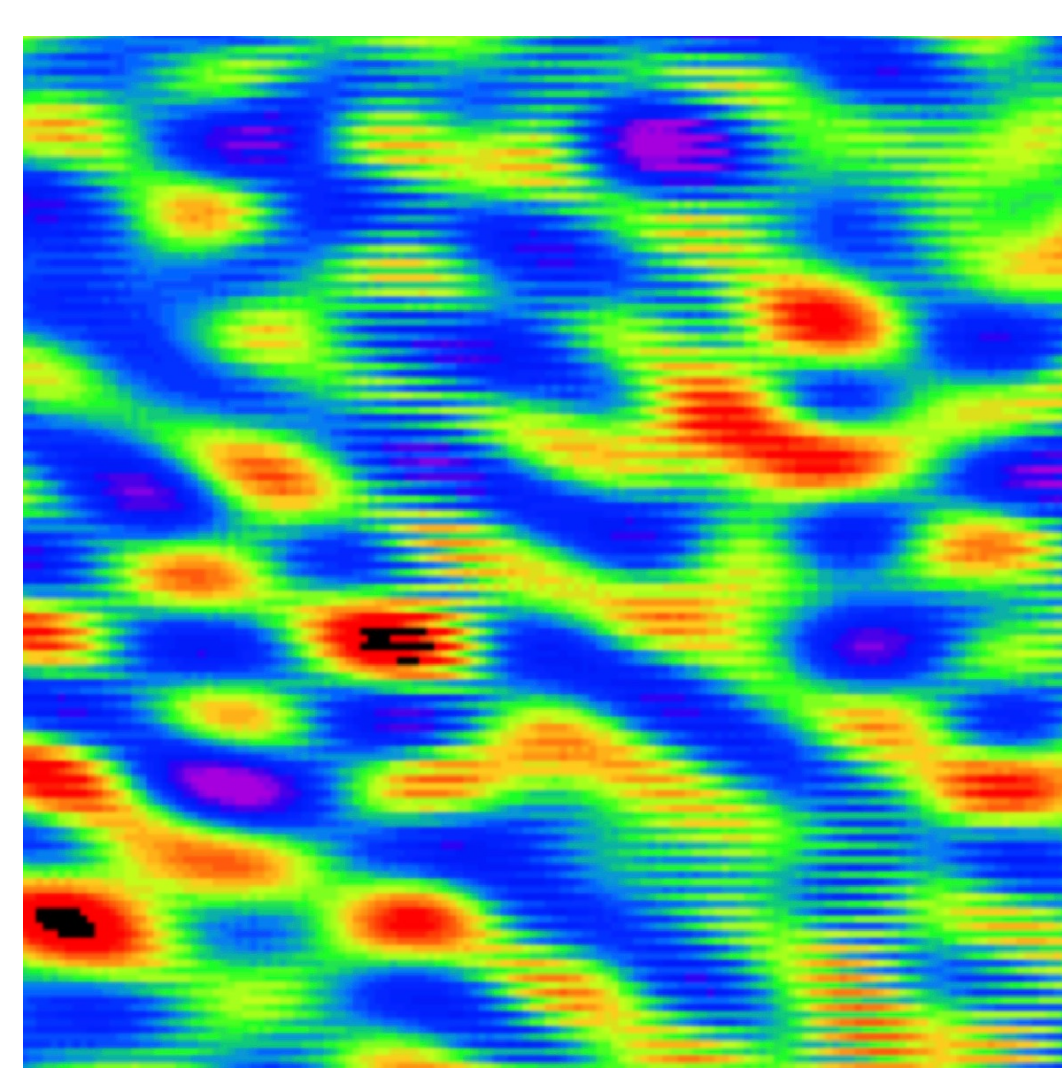


Fig.1 Towards a Colour AFM

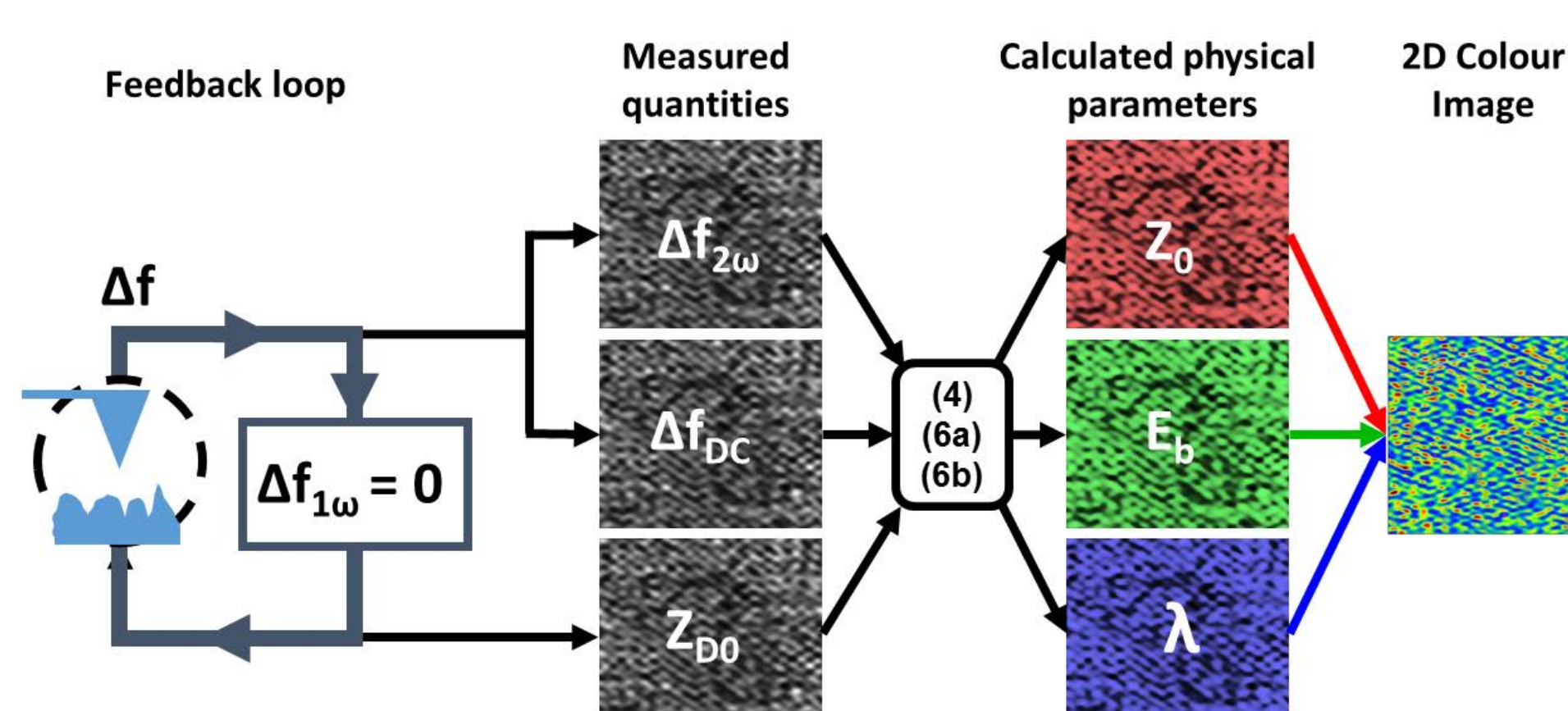


Fig.2 Real-time mapping of the Morse potential

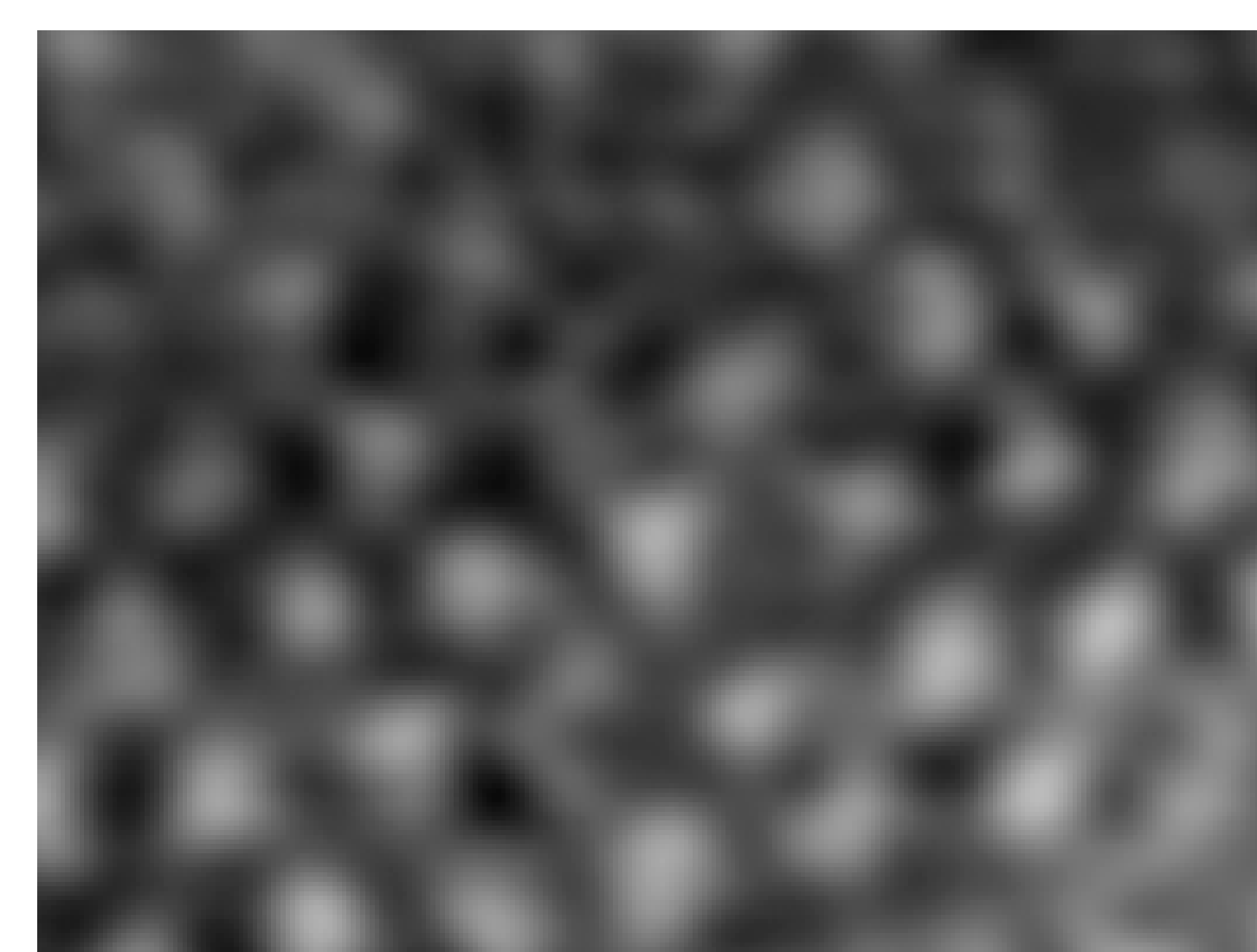


Fig. 3 Structured liquid molecules at RT.

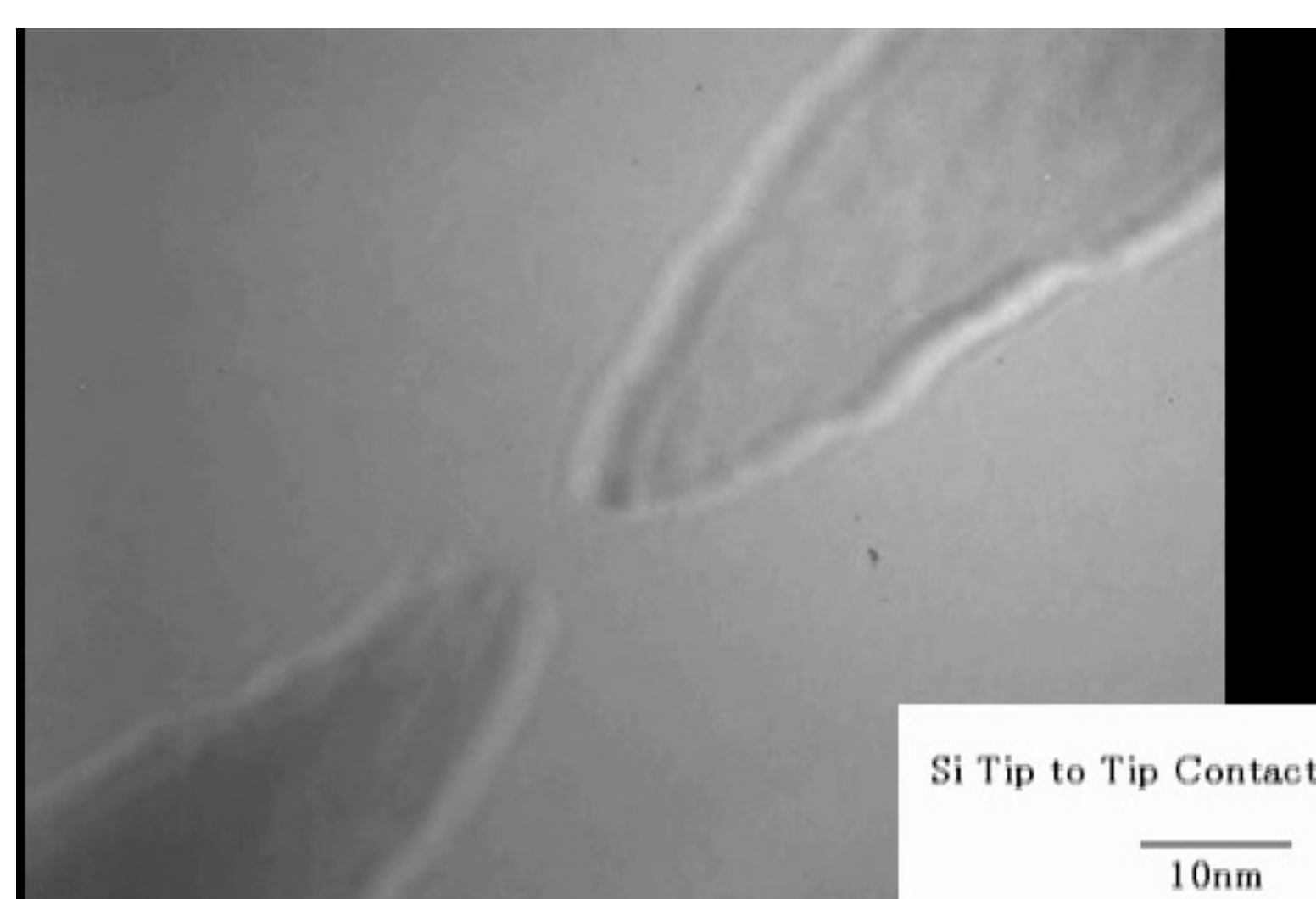


Fig.4 UHV AFM/TEM

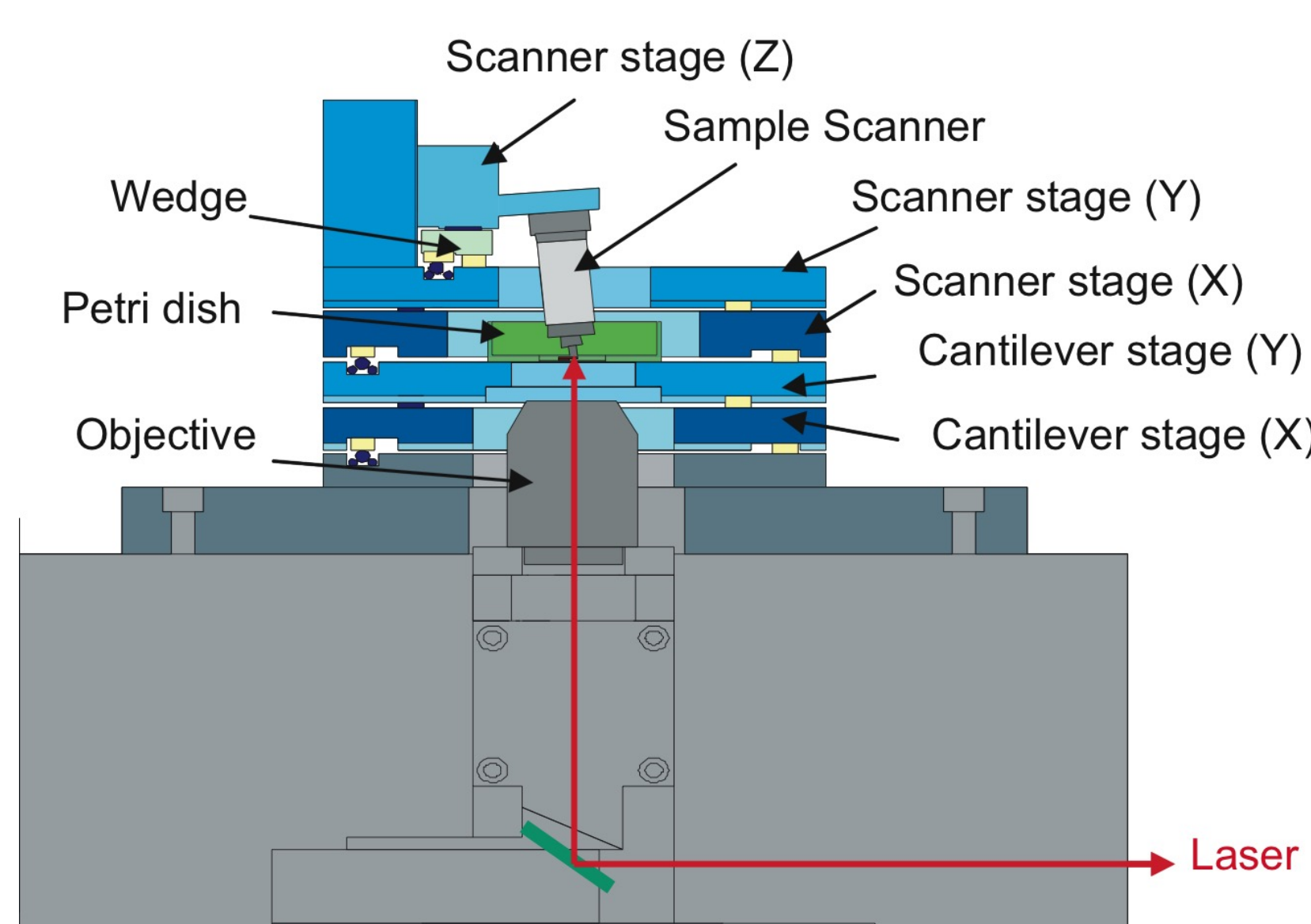


Fig.5. Liquid AFM

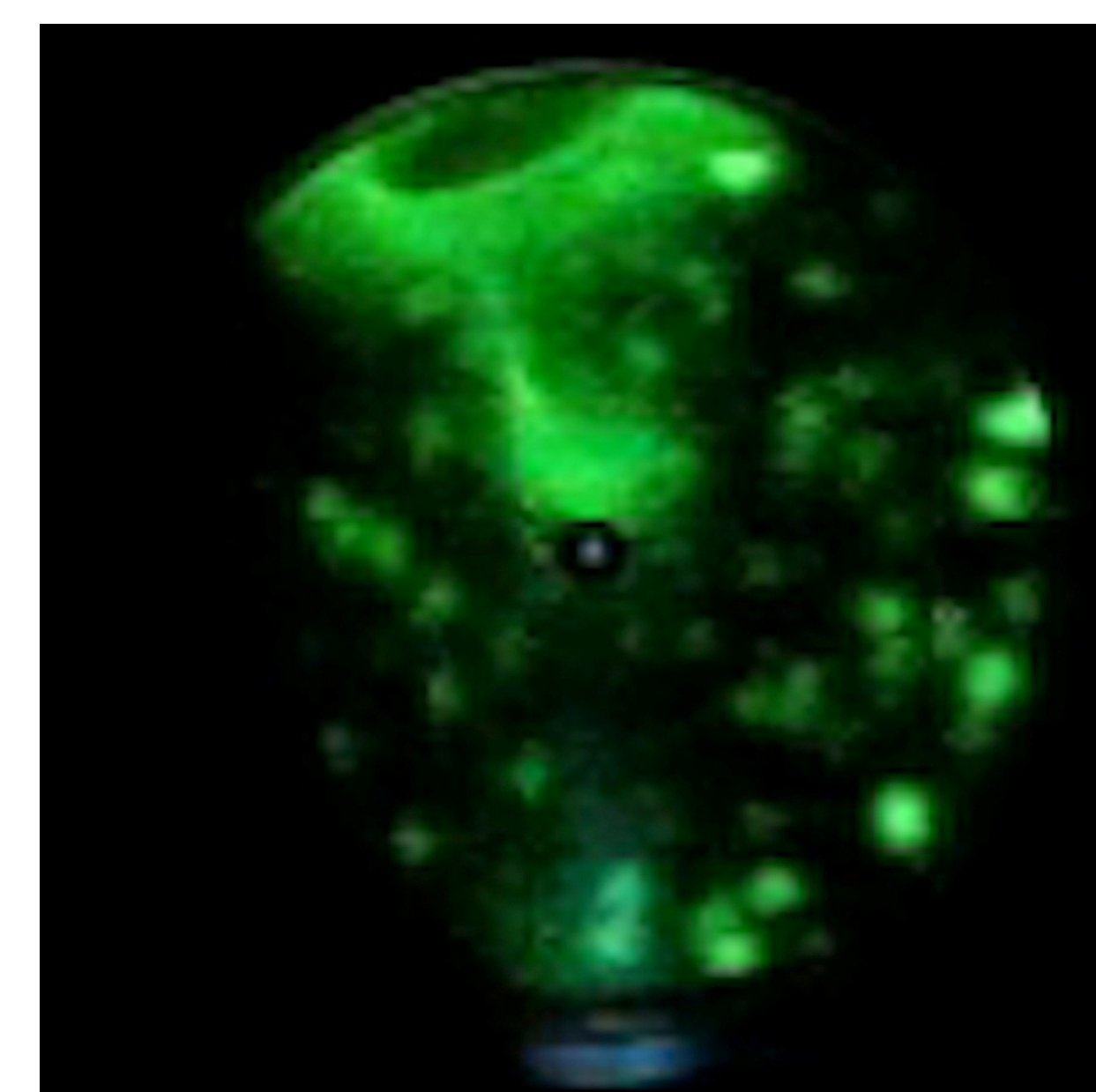


Fig.6 Towards vibration measurement of molecules and nanooscillators