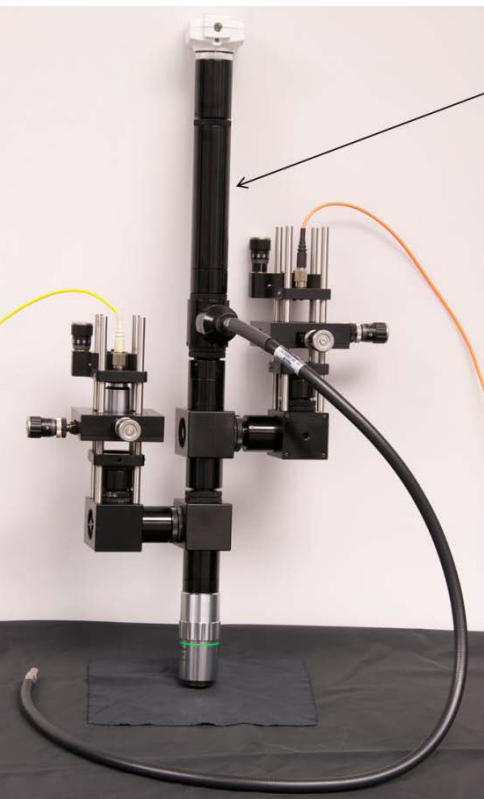


Optical Spectroscopy and Confocal Microscopy for Atomic Force Microscopes (AFM)



"ACTO-S"



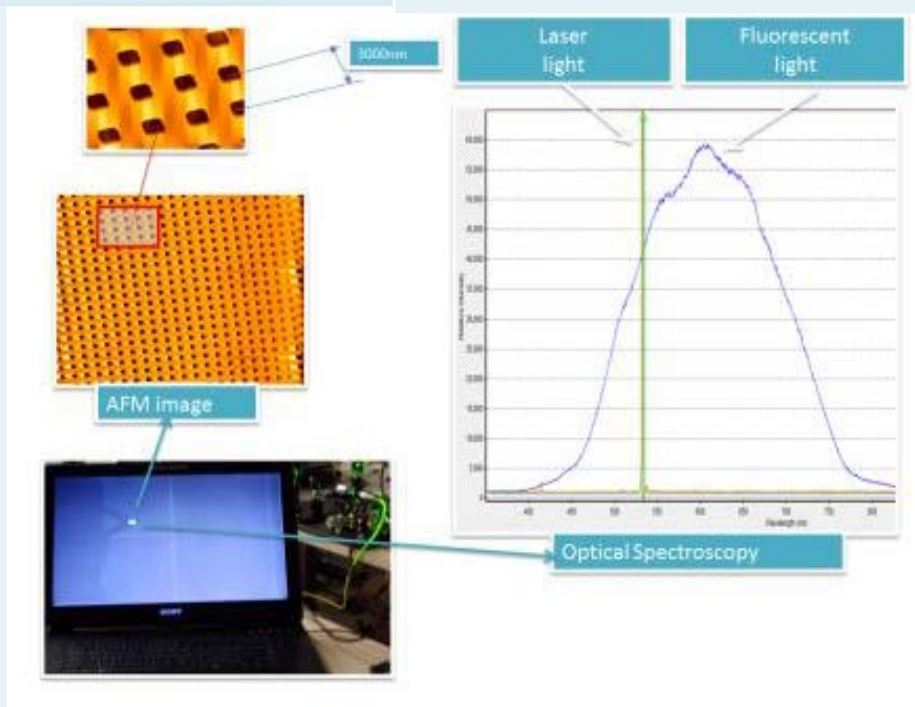
Possible ACTO-S integration with conventional Atomic Force Microscope (AFM)

ACTO-S– budget system fits to any AFM to do:

- Combining AFM imaging with scanning optical microscopy and spectroscopy (PL, reflection and transmission) in real time
- Single Molecular Spectroscopy (including Raman and Fluorescence)
- Photoluminescence (PL) and refractive index mapping with submicron lateral resolution
- Cost is up to 10-20 times less than AFM microscopy–spectroscopy systems with similar characteristics

ACTO-S includes:

- Optical confocal microscope unit;
- Digital camera (CMOS);
- Fiber Optic Illuminator (30W)
- Green Laser (532nm, 20mW);
- CCD-based spectrometer (350nm-1050nm)
- Essential software
- You could apply your own x, y, z, stages and use it with your own lasers and optical spectrometers.

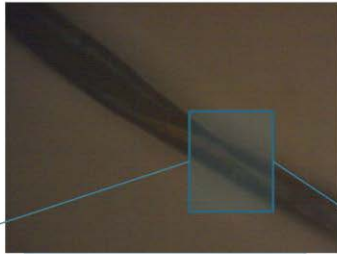


Specifications: Optical resolution - up to 250nm, Weight - 1kg to 3 kg, Optical Mechanical stability - better than 200nm, Spectral range - from 350nm to 2000nm.

Optical Spectroscopy and Confocal Microscopy for Atomic Force Microscopes (AFM)

Polarization Contrast

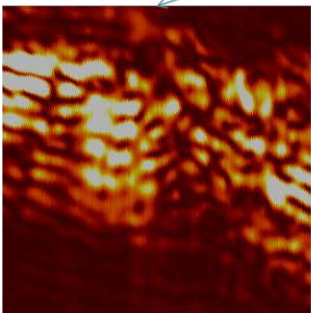
Organic fiber on mirror surface



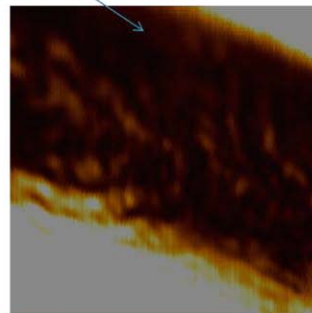
Scanning optical imaging - no AFM imaging is necessary

20x0.42NA, Bright filed

30um



20x0.42NA, Confocal with polarization contrast



20x0.42NA, Confocal without polarization contrast

Application

Testing Optoelectronic Materials and Nano-devices

Color filter arrays (CFA) and micro-lens
Characterization for focal plane arrays

Cross-sectional characterization of strain layer superlattices (SLS)

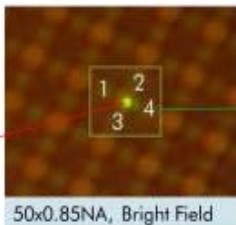
Biophysics and Medical Research

Optical spectroscopy of a single virus and a single string of DNA

Tip-enhanced scanning probe Raman spectroscopy and optical nano-crystallography

Focal Plane Array (CMOS imagers)

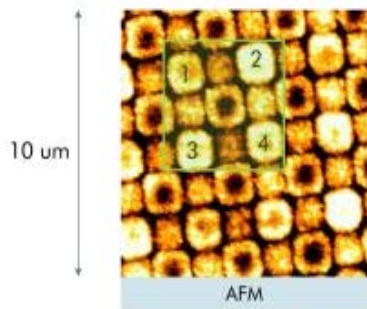
Color Filter Array (CFA) characterization



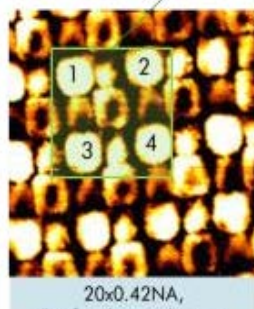
Green laser focused on 400 nm spot

Four Green pixels reflect green laser light

50x0.85NA, Bright Field



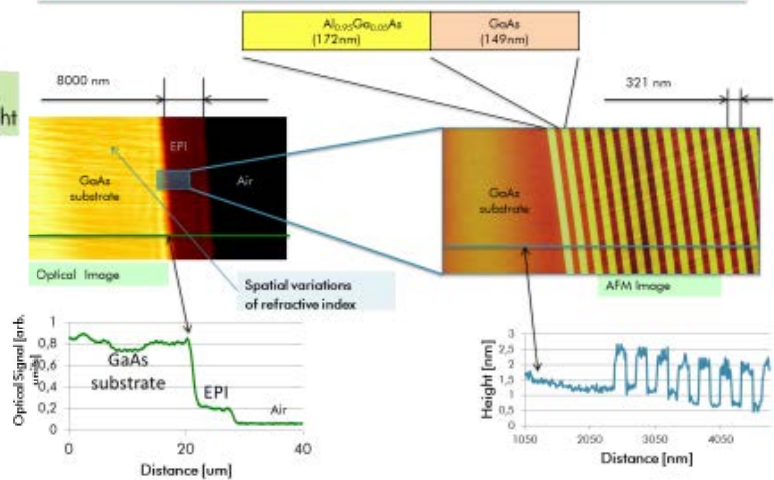
AFM



20x0.42NA, Confocal optical image

10 um

Crosssectional AFM and Confocal Scanning Microscopy of VECSEL structure at the same time



We do not sell you a new AFM! We provide you with an accessory to your existing AFM to do optical microscopy and spectroscopy on single molecular level.

We are looking forward to discuss how we can help you!

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