

Micro Spectrometer for Single Nanoparticle Dark Field Scattering Measurement

Manufacturer: Zeiss & TIDAS

Description

The equipment is designed for collecting scattering spectrum and dark field image of single Nanoparticle. It can suppress the background and enhance the imaging of the Nanoparticle with high contrast, and spectral characterization of individual Nanoparticle. It is suitable for both transparent and nontransparent substrate. The size of Nanoparticle can be down to at least 50 nm in diameter. Images are taken by a high resolution Axiocam MRm camera. Plasmon change of Nanoparticle and its surrounding environment can be recorded by a spectrometer. The whole system is placed on Bench top Isolation System to isolate against external vibrations.

Specifications

Halogen illumination	quartz collector, power 100W, reflection and transmission light with shutter
Shutter	reflected light internal shutter (fast switching time < 100 msec) transmitted light internal shutter (fast switching time < 100 msec)
Objective lens	10x/0.2 (WD = 14.3mm), 50x/0.8 (WD = 0.6mm), Apochromat 63x/1.0 water immersion (WD= 2.1mm), 100x/0.95 (WD = 0.28mm), 100x/1.30 Oil Iris (WD= 0.2mm), 50X/0.55 (WD = 9.0 mm), 100X/0.75 (WD = 4 mm)
Z drive	10 nm step size, reproducibility at +/- 10 nm
XY control	Motorized stage
Field of view	23 mm
Dark field condenser	DF 0.9, WD 0.4 mm
Polarization	90 degree for transmission, 360 degree for reflection
Wavelength range	350 – 1000 nm

