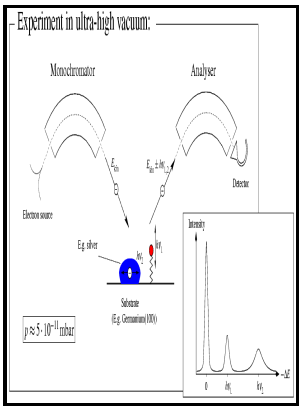
Electronenergy loss spectroscopy and surface vibrations

Academic Press - High resolution electron energy loss spectroscopy



Description: -
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Crystals -- Spectra.
Electron spectroscopy.Electronenergy loss spectroscopy and surface vibrations
-Electronenergy loss spectroscopy and surface vibrations
Notes: Includes index.
This edition was published in 1982

Tags: #Tailored #Nanoscale #Plasmon

High resolution electron energy loss spectroscopy

Considering that 10 2 eV electrons have a mean free path of around 1 nm corresponds to a few monolayers , which decreases with lower energies, this automatically implies that HREELS is a surface sensitive technique. Specifically, the variation in energy and intensity of the signals with electron probe position is explored experimentally and theoretically. Plasmon—phonon interaction was probed initially using the sample configuration 1 sketched in a, where only surface phonons interact with surface plasmons, avoiding any potential overlap between surface and bulk effects.

High

The final 50% drop occurs much more rapidly over only 5 nm. There are different mechanisms for excitation of vibrational modes with fast electron beams.

High

We finely tune the energy of surface plasmons in metallic nanowires in the vicinity of hexagonal boron nitride, making it possible to monitor and disentangle both strong phonon—plasmon coupling and plasmon-driven phonon enhancement at the nanometer scale. In the energy-loss range of interest, each raw spectrum in a linescan has contributions to the background from the tail of the zero-loss peak.

5.4: Vibrational Spectroscopy

Individual Ag colloidal nanoparticles were screened from a large heterogeneous population for special size-dependent properties and were then used to amplify the speculation for special size-dependent properties and were then used to amplify the spectroscopic signatures of adsorbed mols. The uncertainty in energy position was the channel width, i.

High

We show that the interaction between localized surface plasmons sustained by a metallic nano-antenna and delocalized phonons lying at the surface of an heteropolar semiconductor can generate a new class of hybrid electromagnetic modes.

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