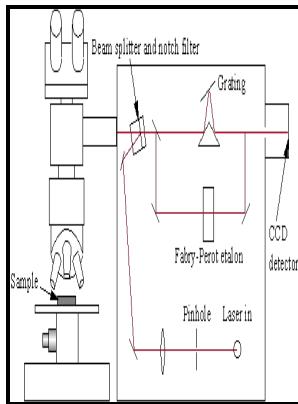


# Characterisation of a scanning laser microscope.

University of Manchester - Characterization of microstructures



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## Characterization of microporous membrane morphology using confocal scanning laser microscopy

Abstract Confocal laser scanning microscopy CLSM is a non-destructive, highly-efficient optical characterization method for large-area analysis of graphene on different substrates, which can be applied in ambient air, does not require additional sample preparation, and is insusceptible to surface charging and surface contamination. All the scanning systems used have high reproducibility, and can be exchanged and mounted with the aid of a simple adapter on the metrological frame of the nanopositioning and nanomeasuring machine. EEG and sSEL probabilities are equivalent and increase linearly in the low irradiance range; importantly the photon energy must be tuned in resonance with the plasmon energy for the sEEG and sSEL peaks to emerge.

## Defect Characterization by Means of the Scanning Laser Acoustic Microscope (SLAM)

Laser scanning confocal microscopy LSCM is known for its non-contact and non-destructive features, and has been used extensively on the biomedical arena. Careful selection of a mounting medium glycerol, immersion oil improves CSLM imaging.

## Characterization of microstructures

We demonstrate that CLSM is an indispensable tool for rapid analysis of mass-produced graphene and is equally relevant to other 2D materials. This maintains the Abbe comparator principle in all three measuring axes.

## Characterization of microstructures

The self-developed macro 3D volume and surface determination for the KS 400 software package combined the images of one stack to a 3D image and calculated the real floc volume and surface. The nano-vibration analyzer consists of a laserinterferometric vibrometer and a technical microscope.

## Characterization of microstructures

The object measured is observed by an integrated USB camera. Vibration analysis of microstructures Laserinterferometric processes are suitable for measuring vibrations because they guarantee high precision, and the measurement results can be traced back to the international length

standard. For epitaxial graphene on SiC substrates, the CLSM intensity allows us to distinguish features such as dense, parallel 150 nm wide ribbons of graphene associated with the early stages of the growth process and large regions covered by the interfacial layer and 1-3 layers of graphene.

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