# Taking the strain

Birefringence imaging and high-energy diffraction

RHEED GUN RH15

## Oxford Applied Research www.oaresearch.com

### High-energy diffraction

Oxford Applied Research offer the RH15, a reflection high-energy electron diffraction (RHEED) gun, operating at 15 kEV. The gun is suitable for diffraction studies and growth monitoring in a wide range of molecular beam epitaxy and other ultra-high vacuum (UHV) applications on superconductors and III-V and II-V semiconductors. Observation of multiple diffraction orders are possible owing to the high electron energy, and they are made readily visible by the generous 1.5-μA beam current. The RH15 is fully UHV-compatible, with robust tungsten filaments that are not sensitive to atmospheric contamination. A working distance of 150-1,000 mm is possible. Electron lens focusing and deflection are also included.

METRIPOL

## Metripol www.metripol.com

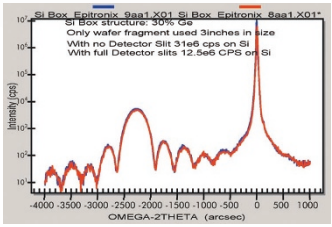
### Birefringence imaging

Metripol, an operating division of the Ferraris Group plc, has announced the launch of a new birefringence imaging microscope. This system—called the Metripol —lets researchers perform qualitative and quantitative measurements of strain on transparent microscopic specimens using a specially designed microscope and the Metripol software package. The microscope can be used to analyse any transparent materials where strain is of interest including crystals, liquid crystals, biological samples, amorphous materials and semi-amorphous materials, and has already been used extensively in areas such as the study of strain in industrial diamonds, twinning and phase transitions in crystals, quality of fibre-optic glass, and crystallite identification in minerals. Filtered light, together with a series of special filters, polarizers and a circular analyser are used. Images collected with this system can then be separated out into their different birefringence, orientation and transparency components, which are normally superimposed in conventional polarizing microscopy. Such images provide an enormous amount of useful information about the structure of birefringent transparent samples. Because this system is quantitative, accurate numerical values can now be assigned to these different components.

BEDE D1

## Bede www.bede.com

### Intense diffractometer




The research diffractometer, the Bede D1, has a tenfold increase in intensity owing to new optics and detector developments. The Maxflux optics from Osmic have new layer materials and improved geometric accuracy enabling the increase in intensity that would normally saturate most X-ray detectors—but not the new one from Bede, the EDRc. This has been developed with a much higher dynamic range, of 0.5 c.p.s to 50 Mc.p.s., and has been designed specifically to meet the need for high quality data from X-ray diffraction and reflectivity measurements using the latest generation of X-ray optics and also synchrotron radiation. Existing D1 systems are easily upgraded.

*These notes are compiled in the* Nature Materials *office from information provided by the manufacturers.*