



**EXPLOIT THE POWER OF RHEED!**

**PREMIER ANALYTICAL RHEED SYSTEM**



**kSA 400 - The Leader in Analytical RHEED.**

The **kSA 400** puts the power of Reflection High-Energy Electron Diffraction (RHEED) at your fingertips.

Whether analyzing a static diffraction pattern or acquiring data during high-speed substrate rotation, the **kSA 400** helps you exploit the valuable wealth of information contained within the RHEED pattern. Combining a high-resolution, high-speed, and high-sensitivity CCD camera with sophisticated RHEED-specific acquisition and analysis software, the flexible **kSA 400** system enables you to analyze virtually any image feature,

program your own custom analysis routines, and, with one of many additional options, control the electron gun for such tasks as acquiring RHEED rocking curves. Easy to use and straightforward to install, the **kSA 400** is designed for convenience and gives quantitative results right out of the box. Choose the industry's most powerful analytical RHEED system – choose the **kSA 400**.

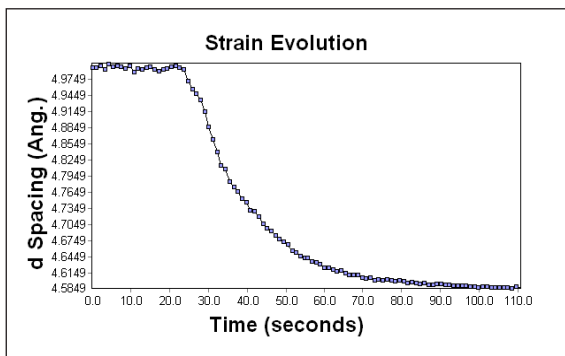
**> FEATURES**

- State-of-the-art CCD camera and optics
- Full I/O and triggering capability
- Compatible with MBE, sputtering, PLD, and e-beam evaporation.
- On-going software development
- Options for Phase-Locked Epitaxy (PLE), LEED, Auger/XPS, and beam rocking scans
- Real-time growth rate, lattice spacing, and surface coherence analysis
- Dedicated technical support
- Full OEM RHEED gun control

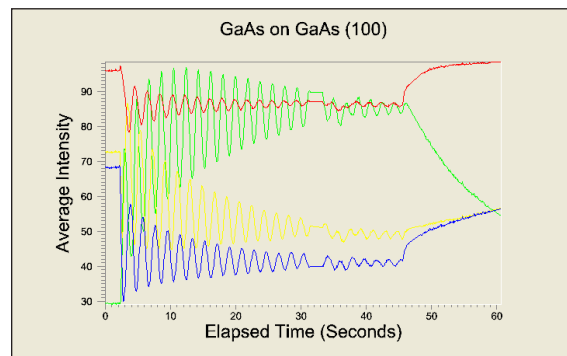
**> BENEFITS**

- Extensive algorithms for quantitative RHEED analysis
- Accurate image storage up to 96-bits deep
- Full movie acquisition and playback
- Publication quality 2D and 3D graphics

**> LATTICE SPACING & STRAIN**



**> 99.9% GROWTH RATE ACCURACY**



# THE MOST POWERFUL ANALYTICAL RHEED SYSTEM AVAILABLE!

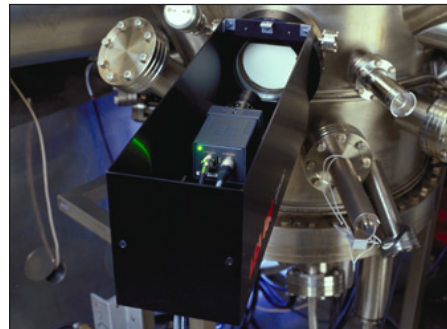
## OPTIONS TO SUIT ALL APPLICATIONS, WITH EXPERTISE AND COMMITMENT TO SERVICE WORLDWIDE



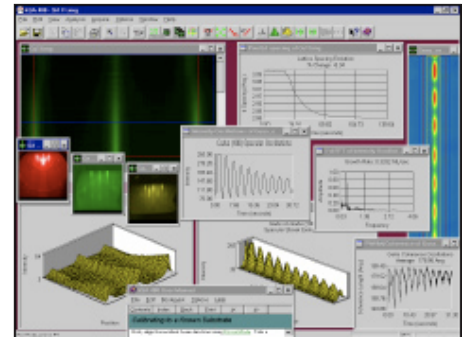
k-Space Associates, Inc.

Extensive customer input has helped us make the kSA 400 the industry's most powerful analytical RHEED system and an integral part of MBE and surface science chambers worldwide. Now in its fourth generation, the goal of the kSA 400 is to provide you with the most information from your RHEED pattern. Seamless integration between hardware and software as well as visually-driven analysis makes user operation straightforward and simple. Exploit the power of RHEED with the kSA 400!

### > TAILORED MOUNTING HARDWARE



### > UNMATCHED ANALYSIS SOFTWARE



### > ADDITIONAL OPTIONS

Option/Part Number	Description	Features
<b>Firewire Camera</b> K30FW	12-bit Firewire camera, cabling, and PCI board	30/60 fps camera depending on 12-bit or 8-bit mode
<b>LEED I/V</b> K4LIV	LEED I/V capability—16-bit DAC and accompanying software	Simultaneously analyze an unlimited number of regions of interest, utilizing kinematic scattering modeling for proper I/V spot tracking with analog control of LEED energy
<b>Phase-Locked Epitaxy (PLE)</b> K4PLE	PLE and timed shutter control	Up to 8 different processes and shutters monitoring RHEED oscillations or growth time for process control
<b>Auger/X-ray Photoemission Spectroscopy (AES/XPS)</b> K4AXR	AES/XPS data acquisition via 16-bit DAC & ADC boards and software	Selectable energy step size, number of samples per energy, scan rate, and number of scans
<b>Electron Gun Control/ Beam Rocking</b> K4EGC	Complete control of RHEED electron guns manufactured by Staib, Viotech, and R-DEC. 8-channel 16-bit DAC board and integrated software	On-screen control and readout of beam energy, filament current, grid voltage, (x,y) deflection, and focus. Store multiple gun settings and perform full automated rocking scans for electron guns with beam rocking capability
<b>Rotation Monitoring and Triggering</b> K4RMT	12-bit absolute optical encoder with built-in programmable logic controller. Trigger accuracy to 0.088 degrees (4096 steps).	Up to 8 independent TTL level outputs, accessible through the supplied encoder cable. Programmable trigger positions (4096) and trigger pulse width may be set in the range of 1 to 255 msec
<b>Multiple Data Set Acquisition</b> K4MDS	Multiple sequential data-set acquisition from a single video source	Each data set is sequentially scanned, providing up to 16 live video images with full storage of image data, processed data, and ASCII data. (Typical uses include acquiring and sorting along multiple azimuths during rotation.)