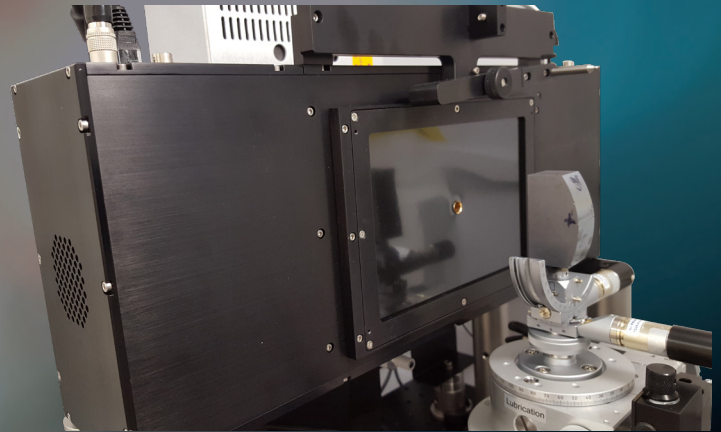


X-ray Laue Back-scattered Camera



High precision crystal orientation

The high resolution Laue X-ray camera allows a digital Laue diffraction pattern to be recorded with a resolution of 2774 x 1843 pixels and 14-bit digitization.

The X-ray passes through the camera and is collimated down < 1mm diameter. The active area input dimension is similar to that of Polaroid film i.e. 156 mm x 104.4 mm. Exposures from a few seconds up to >30 minutes can be adjusted during manual or automatic crystal orientations before being cut. Twinned structures occurring during crystal growth can be unveiled using a high resolution mode.

Upgrades from existing X-ray sources are made using high precision mechanics allowing accuracy down to 0.05 degrees. A micro-diffraction set-up for both laboratory and or synchrotron sources can be provided on demand.

Key Features

- | Active input area of approx. 155(h) x 105(v) 155(h) x 105(v) mm imaged on the sensor
- | Minimum input sizes 57 μ square, 2,774 x 1,843 pixels
- | Selectable exposure from 1ms to 35 minutes
- | On chip pixel addition allowing increased sensitivity at the expense of resolution
- | 18-bit high precision acquisition mode
- | 14-bit fast preview mode
- | Automatic background subtraction mode
- | PSEL acquisition Laue image processing software

Applications

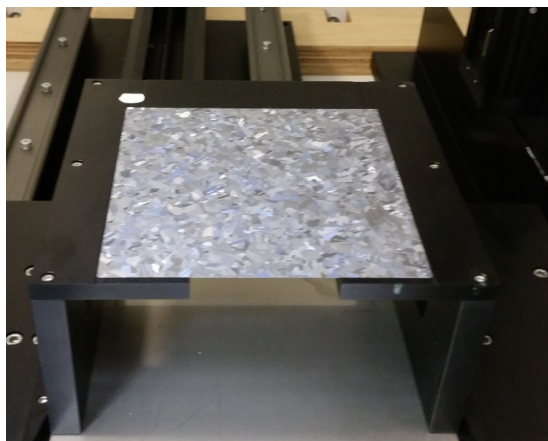
Realtime crystal orientation down to 0.1 degrees accuracy

Misalignment measurements down to 0.5 degrees using PSEL software

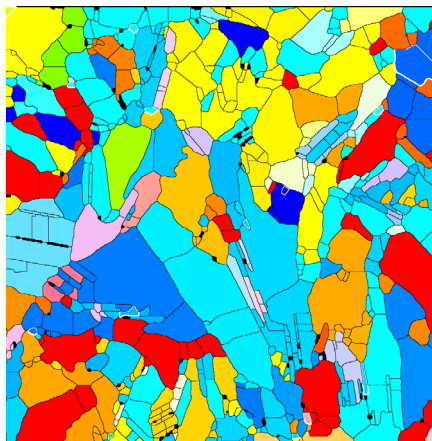
Two dimensional orientation mapping of polycrystalline silicon wafers

High throughput sapphire sample screening. Heavy duty sample screening up to 20kg

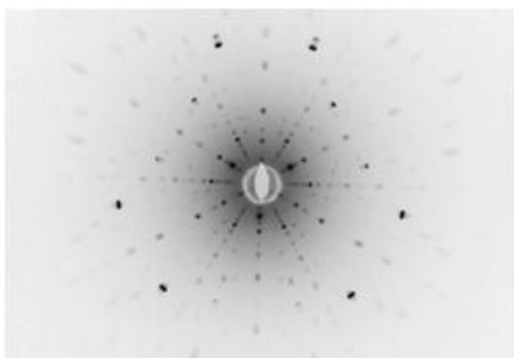
Application images for Laue X-ray camera



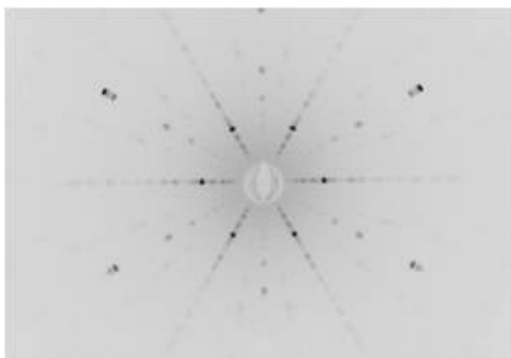
Polycrystalline silicone wafer scanner



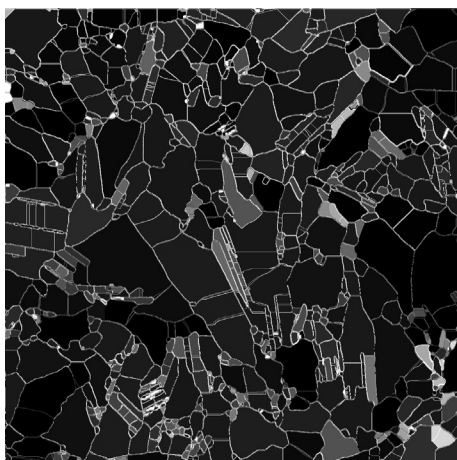
Two dimensional orientation map



Sapphire C-axis aligned



SiC Hex aligned



Poly crystalline Si Wafer



Standard Laue system outline

Detector Materials:

HgCdTe / CdTe
GaAs
InSb

Window Materials and piezo/ferro electric ceramics:

Al₂O₃
Quartz
LiNbO₃

Metals and alloys:

Tungsten
Molybdenum
Nickel based alloys

Laser Materials:

YAG
LuAg
KTP

Thin films / semiconductor substrates:

AlN
InP
SiC

Magnetic and superconducting materials

YBCO/BSCCO/HBCCO
FeSe
NbSn / NbTi

Scintillator materials:

BGO / LYSO
CdWO₄
BaF₂/CaF₂