
X-RAY LAUE CAMERA

X-ray Laue and Laue X-ray Microdiffraction methods help determining the orientation of single crystals using white radiation in reflected or transmitted geometry.

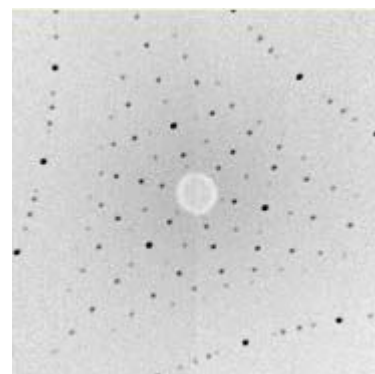
The Laue back reflection mode records X-rays scattered backwards from a broad spectrum source. This is useful if the sample is too thick or bulky for X-rays to transmit through it.

The diffracting planes in the crystal are determined by knowing that the normal to the diffracting plane bisects the angle between the incident beam and the diffracted beam. Crystal orientation is determined from the position of the spots.

Each spot can be indexed, i.e. attributed to a particular plane, using special charts.

The Laue technique can also be used to assess crystal perfection from the size and shape of the spots. If the crystal has been bent or twisted in anyway, the spots become distorted and smeared out.

With modern synchrotron and laboratory optics able to deliver micrometer beam size, it is possible to highlight the grain orientation and strain distribution of individual grains in a polycrystalline alloy before and after tensile loading.



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Microdiffraction