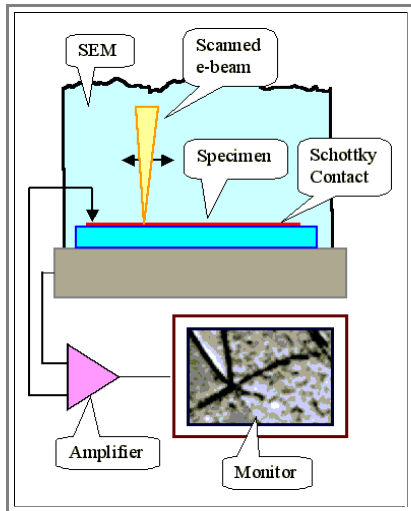


Principle of Electron Beam Induced Current Microscopy

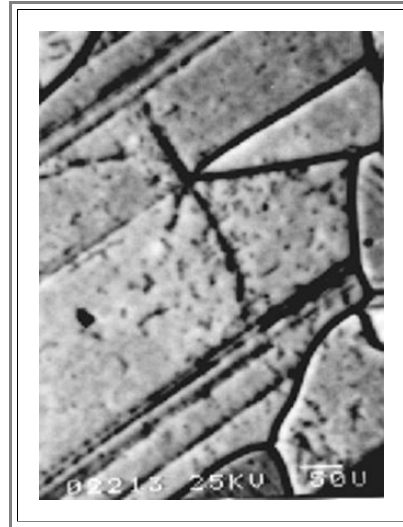
Illustration

The "Electron Beam Induced Current method (**EBIC**) employs a (**SEM**) on a sample with a thin electron-transparent Schottky contact (usually evaporated **Al**). The Schottky contact is biased in reverse, the leakage current is amplified and displayed on a monitor synchronized with the electron beam scan.

- The electron beam induces carriers; the minority carriers either recombine at defects or are collected at the Schottky contact as current with the resulting signal being displayed on the monitor.
- The picture on the monitor thus shows the effective minority carrier life time. Defects that are "electronically active" reduce the currents; they appear in dark contrasts.



Principle of EBIC



Typical EBIC picture, showing electronically active defects in solar-grade **Si**.