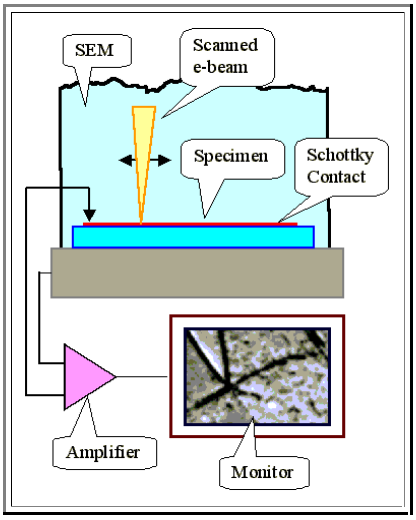
Principle of Electron Beam Induced Current Microscopy

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 elecon 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 efffective 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**.