Identify defects that lead to bipolar degradation

Bipolar Degradation Simulator for SiC Wafer

Bottlenecks in conventional evaluation approaches include:



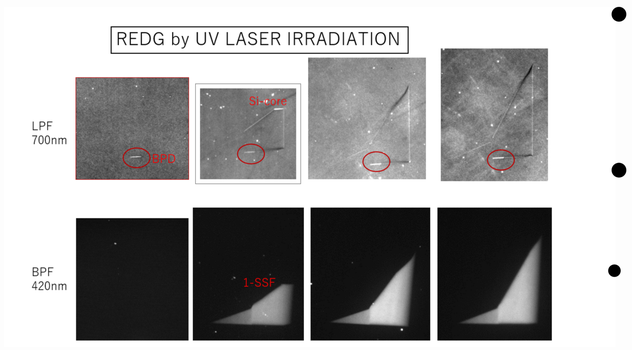
- 🕒 Long testing time
- 👷 Manual handling
- 🔬 Limited info from PL only
- 🔁 Slow process cycle (1–2 months)
- etc

Features of the ITES's Simulator

Device fabrication can be omitted by using UV irradiation combined with PL observation

Feature 1:
Visualize Latent Defects Causing Bipolar Degradation with Intense UV Laser

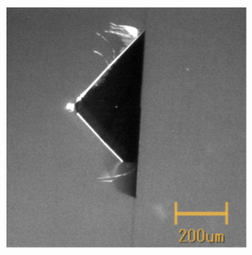
UV Irradiation



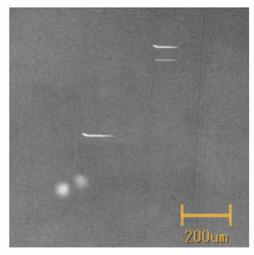
Irradiation Conditions

- Nd-YAG Laser
  - 355nm
  - Max 500uJ/shot
- Beam Diameter
  - Φ2～5mm
- Irradiation Intensity
  - Max 1000W/cm2

PL observation



三角欠陥



BPD

Magnification

- 5x
- 10x, etc

Wavelengths

- BPF 420nm
- LPF >700nm
- BPF 380nm

Feature 2:
Evaluation process shortened from 2 months to 2 days

Conventional evaluation approaches

Surface Treatment → Ion Implantation → Annealing → Electrode Formation → ●●●●●●

Circuit Processing & Bipolar Degradation Testing: ~2 Months

ITES's bipolar degradation simulator

Surface Treatment → Ion Implantation → Annealing → Electrode Formation → ●●●●●●

Can be evaluated

Skip Circuit Formation. Evaluate in Just 2 Days After Each Process Step

Trial Measurements Available



Please contact us for further details

ITES 株式会社アイテス

We also offer contract services for UV irradiation and PL observation.
Feel free to contact us for more information!

