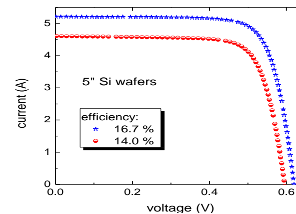
solar cell and PV module design and production
consultant service, research and development

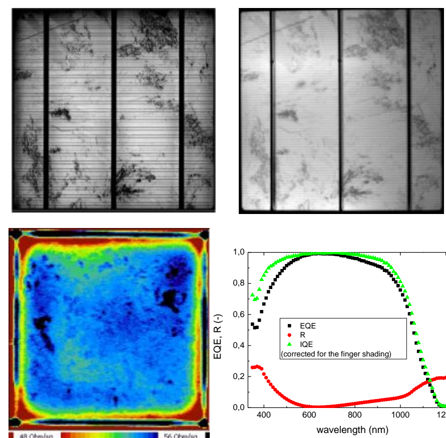
Diagnostic tools for Si wafer and solar cell characterization

Electrical characterization



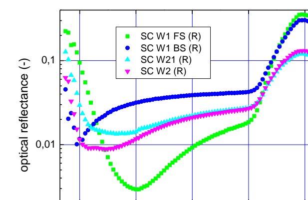
- Illuminated I-V curve measurement (solar simulator SS200B)
- Suns-Voc measurement – evaluation of Voc, pseudo FF a pseudo Eff (Sinton)
- Reimer technique and TLM method (sheet, metallic layer and contact resistance evaluation)

Opto-electronic characterization of Si wafers and solar cells



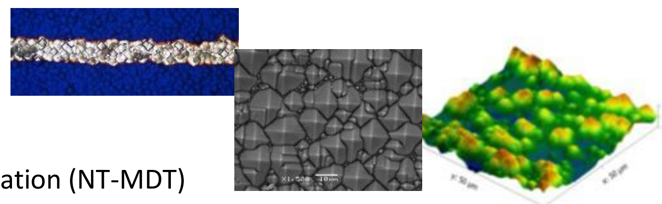
- Light Beam Induced Current (UV, VIS, IR)
- Electroluminescence mapping
- Quantum efficiency measurement
- Dynamic testing (evaluation of effective carrier lifetime and reverse breakdown voltage)
- Mapping of minority carrier lifetime and doped layer sheet resistance (WT2000 tool)
- Quasi Steady State Photoconductivity – Sinton (evaluation of implied Voc, dark saturation current density, sheet resistance, …)
- 4PP – four point probe mapping (Si wafer resistivity and sheet resistance of doped layers)

Optical characterization of solar cell structures



- Transmittance/reflectance measurement
- He-Ne ellipsometry (for polished samples)
- Spectra-Suite spectrometer

Microscopic tools



- Optical microscopy with deep focus option and integrated camera
- AFM - Atomic Force Microscopy with various SPM modes for surface morphology characterization (NT-MDT)

Degradation setups for solar cells and minimodules

- Light degradation setup (halogen lamps, temperature stabilized cell holder)
- PID – potential induced degradation after cell encapsulation (laminator for PV minimodules)

FILL FACTORY s.r.o.
Televizni 2618
Roznov pod Radhostem 756 61
Czech Republic

phone: +420 724 104 385
email: info@fillfactory.cz
URL: http://www.fillfactory.cz