PRODUCT NOTE

Helios LITE-/LAB-/SCAN-tex: Offline Texturization Control for Mono-Crystalline Solar Cells

NEW - Patent Pending Design

For wafer based solar cells the texturization is a very important wet-chemical production step to ensure highest solar cell efficiencies. Especially for mono-crystalline solar cells, the pyramid structure due to the texturization process must be homogenous and well defined.

Process parameters like time, temperature and etch concentration have a strong influence on the pyramid dimensions and density. Standard test procedures like reflectivity measurements or microscope pictures just give a rough idea about the texturization quality. A detailed knowledge about the pyramid structures as well as the pyramid dimensions on the wafer is essential for optimizing and ensuring highest quality texturization.

Measurement of Pyramid Properties

NXT offers unique equipment to measure the pyramid dimensions and distribution on mono-crystalline textured solar wafers. The system is available in 3 different offline setups!

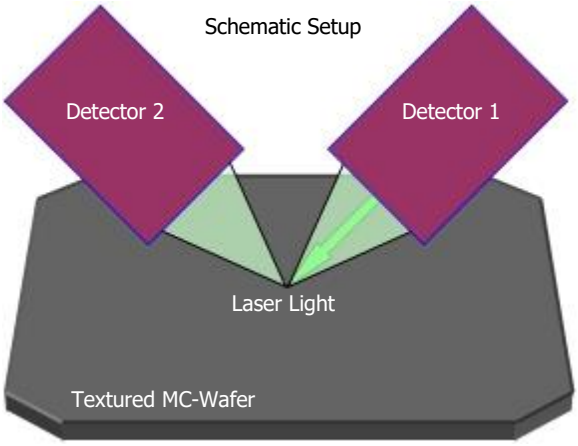
Highlights of HELIOS –tex:

Measurement of MC-Texture Properties:

- **Pyramid Density**
- **Average Pyramid Height**
- **Pyramid Height Distribution**
- **Pyramid Angle**

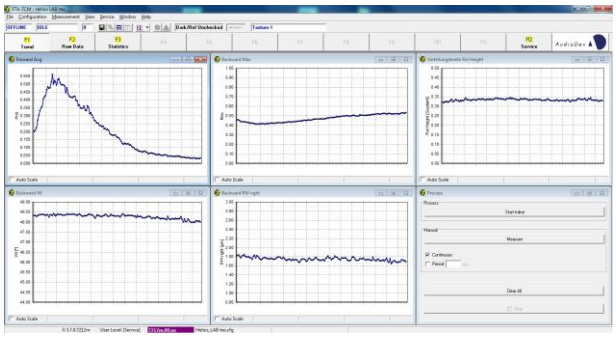
Works for production and R&D!

- contactless and non-destructive
- static and dynamic measurement
- very fast (<0.1 sec/point)



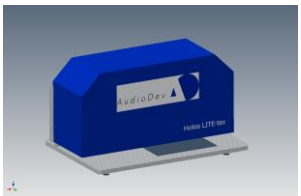
Schematic setup of the optical measurement layout: simultaneous detection of forward and backward scattered laser light

Measurement Example

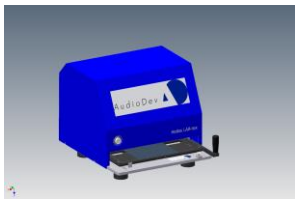


Screenshots of a scan on an inhomogeneous textured mc solar wafer with graphical and statistics information

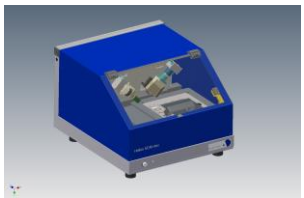
Available Setups:



***Helios LITE-tex**: Cost-effective, simple to use offline system*



***Helios LAB-tex**: Comfortable one axis linear sample stage*



***Helios SCAN-tex**: High-end automated XY-stage for wafer mappings*

This is NXT GmbH

NXT is a world leader in comprehensive quality assurance solutions for specialized industries. We offer high-precision analyzers, proactive customer support and training, and Test-Centers around the world.

For different industries, our ETA™, Helios and Xelas instrument families are perfect tools for protecting quality and production efficiency. With a large installed base of testers worldwide, NXT has achieved recognition as a perfect and reliable partner for optical measurements solutions.

For producers of solar cells, OLEDs, optical medias, flat panel displays, precision optics, automotive glass, consumer packaging and other thin film applications, our solutions provide comprehensive, non-destructive quality assurance that is both time- and cost-efficient.

Our headquarter is located in Heinsberg, Germany, with subsidiaries in Sweden, USA, China and Taiwan, plus a service and support network of agents worldwide. In 2016 NXT GmbH was renamed from the formerly well known AudioDev GmbH, also known as ETA-Optik GmbH before 2007.

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