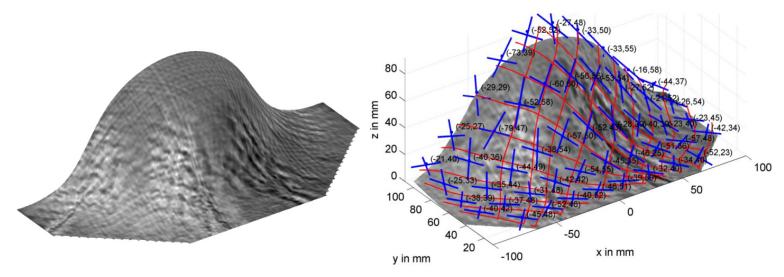


EddyCus® rob – Sensor Kit for Robot Integration

P_ROB_20



Source: Bardl G., ITM TU Dresder

Fiber Orientation and Distribution in Preforms

The **EddyCus® CF Sensor Kit** is specifically designed to be integrated with robots or automated tools for the testing of shaped carbon fiber preforms.

The testing system utilizes the electrical conductivity of the carbon fibers to gain structural information about the form; for instance, information on fiber orientation and fiber distribution. The high resolution EC- scans also enable defect detection, e.g. **gaps**, **misalignment**, **wrinkles** or **overlaps**.

The EddyCus® system can be used at any stage in the production process for: carbon fiber textiles, stacks, preforms or composites. Both basic flat as well as curved parts or preforms can be checked by the flexible robotic solution. Therefore, the system particularly helps process engineers or R&D-focused groups to evaluate the results of individual production steps.

The evaluation **software "EddyEVA"** allows the **filtering** of differently **oriented layers** or highlighting of **anomalies** such as defects. The user can classify the results to deepen the understanding of the material.

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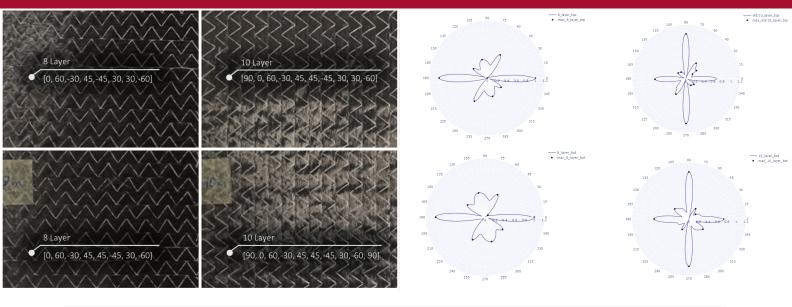
www.suragus.com www.carbon-fiber-testing.com www.suragus.com/FAQ www.suragus.com/CFSensorKit

Engineered and Made in Germany





EddyCus® rob – Sensor Kit for Robot Integration – Fiber Orientation inside 3D Carbon Preforms

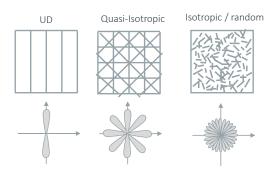


Parts geometries	Flat, slightly curved or shaped
Carbon fiber materials	CF fabrics, textile, stack, preform, composite
Speed	500 measurements/sec results in 0.25mm resolution
Feature	Rotate sensor independently to quickly check orientation
Mode	Contact and non-contact
Integration support	CAD files, SDK libraries .net, personal training
Software	Evaluation software EddyEVA for 2D & 3D eddy current images
Robot/ automated tool required	0.1 mm goal point difference, pay-load of ~1kg

Application as Spot Check for Stacking Sequence & Validation of Simulated Fiber Orientation

Rotate sensor on a single location - evaluate fiber orientation of multiple layers below within seconds

- ▶ Quick check of fiber orientation @ critical locations
- ▶ Check correct stacking sequence after lay-up
- ► Eddy Current displays lay-up orientation similar to tensile plots



Application as 3D Scanner for EC-Images

Mounting the sensor on robot to scan line-by-line to acquire images from layers beneath the surface

- ► Fiber orientation of individual layers & hidden layers
- ▶ Fiber spacing & fiber distribution

