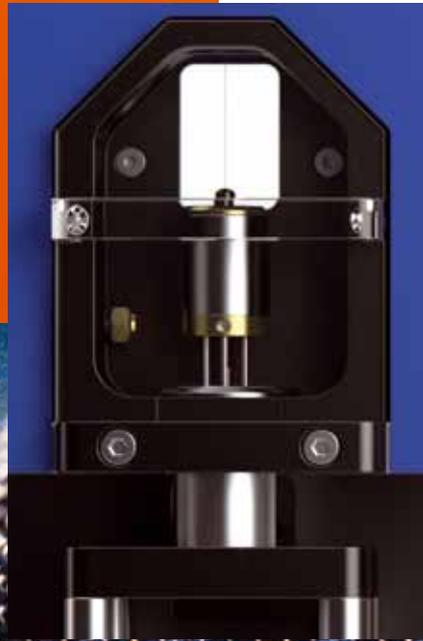


**Textechno**  
textile testing technology



## **FIMATEST**

Fibre-Matrix Adhesion Tester



## **Fibre-Matrix Adhesion Tester FIMATEST**

The performance of composite materials strongly depends on the adhesion of the fibres to the matrix. On the microscopic level different test procedures have been established in various research institutes, however, most results are not comparable, since none of these tests is standardized or commercially available.

In order to make a versatile and reproducible single-fibre pull-out test available to institutes and industrial customers world-wide, Textechno, leading experts in the field of fibre testing, have developed the FIMATEST system together with the Leibniz Institute of Polymer research Dresden (IPF) and the Faserinstitut Bremen (FIBRE). While the IPF has long-standing competence and experience in the field of fibre-to-matrix adhesion, FIBRE contributes by their experience in image analysis. The FIMATEST consists of two devices: the partially automated embedding station FIMABOND, which is suited for all kind of reinforcement fibres as well as for thermoset, thermoplastic or mineral matrices, and a device that performs high precision pull-out tests as a new accessory to Textechno's single-fibre linear-density and tensile tester FAVIMAT+.

### **FIMABOND**

One of the most critical points to assure reproducible results in a micro-bond test is the precise embedding of the fibre in the matrix

which is required to avoid shear forces. For this purpose the fibre has to be embedded exactly in the center of the matrix droplet. The critical adjustment process assuring this will - in the final version of the embedding station - be controlled by an image analyses software developed by FIBRE.



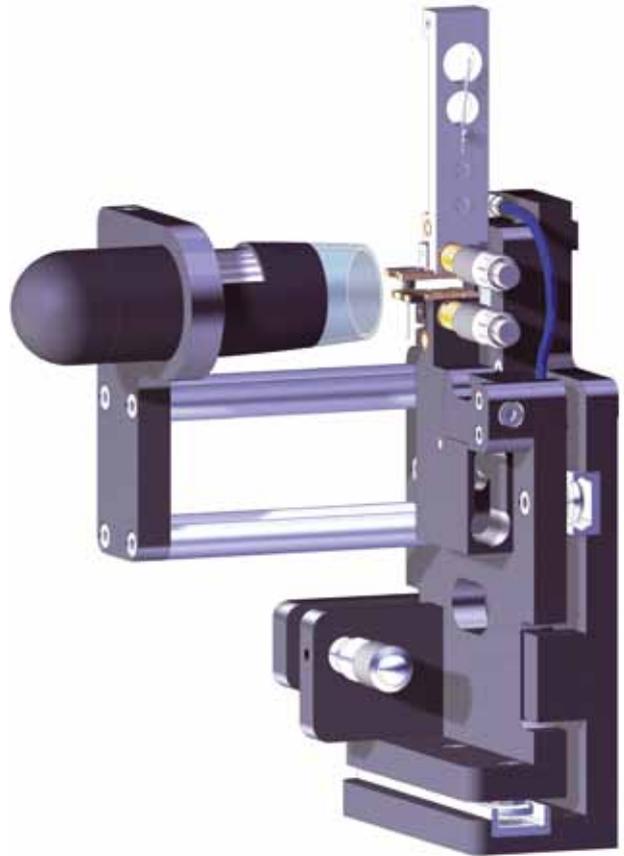
Textechno's new FIMABOND device

## Pull-out Device

The pull-out device is easy to install and operate in the FAVIMAT+. A microscopic camera facilitates the adjustment of the clamps as close as possible to the matrix surface with perfect alignment.

With the integration of the pull-out device into Textechno's FAVIMAT+, the complete set-up allows an easy and precise determination of linear density and cross section as well as modulus, breaking strength and elongation on top of the fibre-matrix adhesion.

The complete set-up is called FIMATEST consisting of the embedding station FIMABOND and the pull-out device as accessory to the tensile-tester FAVIMAT+. The new system is the winner of the 2016 JEC innovation award.



The pull-out device to be installed in Textechno's FAVIMAT+

## Technical data FIMABOND

- Mains supply: 230 V, 50 (60) Hz;
- Inert gas (optional): depending on matrix;
- Lacquer finish: RAL 9006/5002;
- Dimensions: height 670 mm,  
width 480 mm,  
depth 285 mm;
- Weight: approx. 35 kg;

The above technical contents can be subject to changes by Textechno.

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## THE TEXTECHNO GROUP

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