

PRESS RELEASE

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Mikrosam AD

Krusevski pat bb

7500, Prilep, Macedonia

Phone: +389 (0)48 400 100

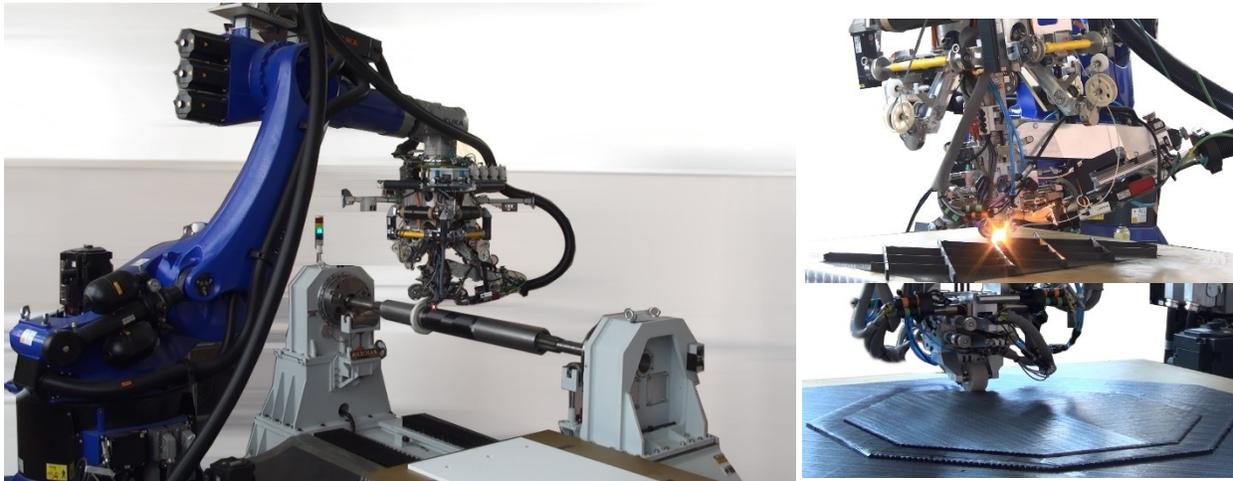
Email: info@mikrosam.com

Mikrosam delivers state-of-the-art multi-material capable Automated Fiber Placement (AFP) system to Brandenburg University of Technology Cottbus

Prilep, Macedonia, November 2018 - The Department of Lightweight Design and Structural Materials (LsW) at Brandenburg University of Technology (BTU) Cottbus has received a brand-new AFP system from Mikrosam. The 8-axes robotic AFP machine is capable of automated and precise placement of thermoplastic fibers, thermoset prepregs, and dry-fiber material. With this equipment the LsW team will have advanced R&D capabilities to design and test complex 3D parts made of composite materials. Such research will contribute to the development of additive manufacturing of complex components with structured functional surfaces as required in industries such as aerospace and automotive.

Mikrosam offers one of the most cost-competitive proven AFP solutions on the market with many advancements for maximum productivity. The system at BTU Cottbus has highly capable AFP head with uni- and bi-directional placement on open 3D shapes and closed mandrel surfaces, such as pipes and vessels. The time-consuming process of switching material and technology to another on a single AFP head is now reduced to minutes: via simple spool change, and replacement of the laser with IR heating source. The automatic head exchange system as an option allows customers to invest in new AFP/ATL heads in the future for use on the same equipment.

Further capabilities are added for thermoplastic composites – next generation of composite materials which are gaining a lot of interest in the aerospace and automotive industries. Using a laser heating source, precise temperature control, and a closed-loop process, Mikrosam's AFP machines produce in-situ consolidation with better mechanical properties. Mikrosam's extensive research in this area allows customers to increase the use of thermoplastic composites which are recyclable and more environmentally friendly. Additionally, the dry-fiber placement capability on the same AFP head opens possibilities for developing and testing new and complex pre-forms for aerospace and automotive needs.



The multi-material AFP Robot machine performing thermoplastic tape flat and rotational placement, and thermoset prepreg layup

“With this is advanced AFP system we continue the tradition of offering customers the most flexible and cost-effective AFP and ATL solutions. The possibility of using multiple materials on the same equipment with very short down time should increase the span of research applications and demonstrate new technologies to industry partners which are developing new, high-quality composite structures, and fuel the demand for more composite parts.” – stated Dimitar Bogdanoski, Sales Manager at Mikrosam AD.

The advanced programming and control software architecture power the complete automation of the AFP machine. **MikroPlace** makes the simulation of composite parts and **QCS (Quality Control System)** offers continuous improvement via data monitoring and traceability.

To complement the AFP system, the LsW department also received equipment for wide and narrow prepreg tape slitting and rewinding to prepare spools. The slitting & rewinding machine is designed to work with thermoset and thermoplastic prepreps to produce spools with various sizes and re-winding styles, e.g. from 300mm wide tape down to ¼” tapes used in AFP. This equipment cell is a cost-effective solution for integrating prepreg into narrow tape production and AFP process.

About Mikrosam

Mikrosam AD, based in Prilep, Macedonia, is a globally-recognized leader in machines and know-how for the composites industry. It has installed more than 240 composites production lines at some of the most demanding customers in over 40 countries, including Germany, Sweden, USA, Japan, Russia, China, India, Korea. All machines are engineered-to-order using unique knowledge from proven solutions in: 6-axis filament winding, AFP/ATL robotic and gantry machines, automated production of CNG/H₂/LPG tanks, prepreg production & conversion. Integrated with its own state-of-the-art software for simulation and process automation, Mikrosam provides factory-automation for modern composites manufacturing. In our R&D center, we offer prototyping, testing, product design and technology development. Join our growing customer success list.

About BTU Cottbus – Senftenberg, Chair of Lightweight Design with Structured Materials

The lightweight design research in the field of fiber-plastic composites is a successful research focus at the Brandenburg University of Technology Cottbus - Senftenberg. Along the product-oriented value chain, the international and interdisciplinary team of the chair of lightweight design with structured materials deals with the cross-industry development of energy-efficient lightweight design solutions and associated production technologies. From the initial idea, through the design of prototypes to the technical implementation of complex technology demonstrators, the focus primarily lies on the design, simulation and production of functionally integrative multi-material design methods, using fiber-plastic composites and metals.