

PRESS RELEASE

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Mikrosam and Composite Automation outfit NIAR ATLAS with the latest composite prepreg slitting and rewinding unit for advancing aviation industry research

Prilep, Macedonia, March 2021 – Mikrosam has completed the installation of its latest custom-made prepreg tape slitting and tow-rewinding machine at the National Institute for Aviation Research (NIAR) at Wichita State University.

NIAR selected Composite Automation and Mikrosam to deliver a single-step slitting unit to facilitate its need to perform research on variety of composite prepregs in the Advanced Technologies Laboratory for Aerospace Systems (ATLAS). ATLAS is a multi-disciplinary manufacturing environment aimed at preparing engineers for the *Factory of the Future* and aiding industry with advanced material research with automated manufacturing technologies.

“With the addition of Mikrosam slitter to our portfolio of automated manufacturing equipment, we are able to support the demand from multiple automated fiber placement machines at NIAR – conducting research in a timely manner and supporting our industry partners’ slit-tape material needs,” said Dr. Waruna Seneviratne, ATLAS Director. “The integrated in-process inspection system and the machine-learning algorithm for detecting defects allows us to perform quality control on the fly.”

The prepreg slitting equipment from Mikrosam is a single-step process for slitting of unidirectional thermoset and thermoplastic prepreg tapes and rewinding them on multiple station traverse winders. The equipment is dedicated to slit prepreg tape from maximum width of 24.5” (600mm) down to 0.25” – 0.5” (6.35mm – 12.7mm) and then rewind on a spool that can be used for automated fiber placement (AFP). It can also be used for slitting down to 3” – 6” (75mm – 150mm) wide tapes on a spool that can be directly used on automated tape laying (ATL) processes.

Mikrosam offers one of the most cost-competitive and advanced prepreg slitting and rewinding units on the market. These units are ideal for operations in which customers demand flexibility in the quantity and types of slit and re-wound prepreg tapes. This innovative machine will facilitate NIAR's research goals with several key benefits, such as:

- **Flexible** usage such as wide to narrow tape slitting, preparation of any number of up to 8 spools or pancake cassettes at a time;
- **Effectiveness** with maximum linear speed of up to 60 m/min depending on the specific material;

- **In-line splicing** of the prepreg tapes which is ideal for preparing bigger spool packages;
- **Future expandability** starting with 8 positions of traverse spool winding which can be upgraded to 48 positions;
- **Tension control** unit ensuring constant and accurate unwinding important for the quality of the slitting process;
- **Laser guiding system** that assists the operator for precise positioning of the mother prepreg spools;
- **Automatic Online Inspection System** - unique Mikrosam technology for inspection and automatic detection of the errors on the slit tape (e.g. tow width and thickness, twisted tow, fuzz detection, foreign object detection, splicing detection) before it is re-winded on the spool;
- **QCS – Quality Control System** – a key component of every Mikrosam machine which records control system and related sensor data for monitoring, traceability and quality improvement of the process.

According to Dimitar Bogdanoski, Sales Manager at Mikrosam: *“With the proliferation of AFP units in research, the demand for efficient, scalable in-house slitting units has grown. Mikrosam is a pioneer in such units which help customers prepare prepreg tapes on-demand, thus saving costs, controlling quality and reducing lead-time and risk in new ideas. Working with Composite Automation, we are proud to help NIAR be more productive in research on manufacturing composite parts.”*



Photo: Mikrosam’s prepreg slitting and conversion unit at NIAR ATLAS

“NIAR’s ATLAS is the only fully-integrated facility that can perform the comprehensive composites manufacturing research that OEMs and tiered suppliers demand in order to reduce risk. Composite Automation is honored to be part of the team.” – stated John Melilli, President, Composite Automation LLC.

About NIAR

The National Institute for Aviation Research (NIAR) at Wichita State University provides research, testing, certification and training for aviation and manufacturing technologies. Established in 1985, NIAR has a \$125 million annual budget; a staff of 650; and more than one million square feet of laboratory and office space in four locations across the city of Wichita, the Air Capital of the World. www.niar.wichita.edu

About Composite Automation LLC

Composite Automation is a Manufacturer's Representative organization that is exclusively focused on the composites manufacturing market. We represent ten different companies that are from the US and Europe in North America. Our principles provide among the most innovative and disruptive technologies in their respective fields that enable our mutual clients to improve their profitability. See our website at www.compositeautomation.com for more information.

About Mikrosam

Mikrosam, based in Prilep, Macedonia, is a globally-recognized leader in automated solutions for manufacturing advanced composites. We specialize in engineered-to-order machines and software to provide leading filament winding performance, modular and upgradeable AFP & ATL units, automated production of CNG/H2/LPG tanks, prepreg production & conversion. With over 280 production lines, our customers across 43 countries, including Germany, Netherlands, USA, Japan, Sweden, Russia, China, India, Korea, rely on the know-how and quality of Mikrosam's solutions. Together with our own state-of-the-art software for simulation and process automation, and R&D center for prototyping, testing, product and technology development, we turn ideas into customer success.