

RAPID COMPOSITE PATCH REPAIR

INTEGRATED COMPOSITE PATCH REPAIR SYSTEM FOR EXPEDITING THE REPAIR PROCESS



TECHNOLOGY FIELD

Manufacturing and Materials

IP PROTECTION

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RESEARCHER



John Tomblin is the Vice President for Research and Technology Transfer at Wichita State University (WSU) and the Executive Director of the National Institute for Aviation Research (NIAR). He is also a Sam Bloomfield Distinguished Professor of Aerospace Engineering.

During his time at Wichita State, Dr. Tomblin has directed a number of multi-discipline and multi-investigator projects with external funding exceeding \$125 million. He has worked in the area of material qualification and insertion into aviation production for 18 years. He has authored numerous publications in the areas of composite and advanced materials research, including reports for the AGATE program and FAA technical reports that have resulted in FAA policy governing use of composites within the aerospace industry.

➔ Composite repairs are complex, time-consuming, and dependent on a skilled mechanic. The current repair process is often susceptible to user-error and inconsistency, which raises concerns surrounding the structural integrity of the repair patch.

ADVANTAGES

Our proprietary technology, a rapid composite patch repair system, allows repairs to be made with greater precision and speed. This technology first scans a damaged composite area using a handheld scanning device and then sends the data wirelessly to a manufacturing facility, where a repair patch is immediately prepared. This on-site scanning process significantly reduces the amount of time needed for preparing a repair patch.

APPLICATIONS

The technology includes a unique application tool for holding the repair patch in place for a quicker and more accurate repair process. By precisely capturing the geometry of the damaged area during the scan, the technology can automatically generate a 3D printing code for a tool that conforms to the damaged area. The fully expedited process includes scanning a damaged area, receiving a shipment of a custom composite patch having an application tool, and then in one step perfectly applying the patch to the damaged area.

- ➔ Aerospace
- ➔ Additive Manufacturing/3D Printing
- ➔ Automotive

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