

Engineered Fluids partners with Dovetail Electric Aviation to develop immersion-cooled batteries for electric aircraft

The partnership will enable next-gen electric aircraft by integrating safe, highperformance immersion cooling into advanced battery systems

TYLER, TX, UNITED STATES, June 12, 2025 /EINPresswire.com/ -- Engineered Fluids, the global leader in single-phase liquid immersion cooling solutions, is proud to announce a strategic collaboration with **Dovetail Electric** <u>Aviation</u>, a pioneer in battery-electric and hydrogen-electric propulsion



Immersion Cooled Battery System by Dovetail

systems for regional aircraft. Together, the two companies are developing a next-generation immersion-cooled battery system, using Engineered Fluids' AmpCool™ AC-110proprietary battery cooling fluid in Dovetail's DovePack[™], its proprietary patent pending modular battery pack engineered specifically for aviation.

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This collaboration represents a leap forward in sustainable aviation by combining advanced battery design with our proven immersion cooling technology to maximize safety and performance"

The immersion-cooled battery is an integral part of Dovetail's electric propulsion systems, designed to convert conventional regional aircraft into zero-emission platforms. The collaboration aims to validate immersion cooling technology as a breakthrough thermal management solution for electric aircraft. In aviation—where safety, thermal stability, and performance are missioncritical—immersion cooling provides an optimal approach to energy storage management.

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"Electric aviation cannot scale without lighter, safer, high

capacity battery solutions, and that requires exacting thermal management at the battery level," said Gary Testa, President and CEO of Engineered Fluids. "By fully immersing the lithium battery cells in AmpCool[™], we deliver dramatically better heat dissipation, eliminate thermal runaway

propagation, and extend battery performance in the most regulated environment imaginable - flight."

Unlike traditional air or cold plate-cooled systems, AmpCool[™] offers direct-contact cooling by surrounding each battery cell with a high thermal density, non-conductive, non-flammable, and chemically stable fluid. This provides 1,600x better thermal conductivity than air and serves as a built-in fire suppressant by isolating and containing failed cells without pressure relief systems or heavy, complex cooling systems.

Additionally, single-phase liquid immersion cooling enables simpler thermal management architectures, eliminating heavy heat sinks, fans, pumps, and tubing—resulting in a more reliable and lighter overall battery system. For aircraft, where aircraft weight is directly tied to range and payload, this reduction is a critical enabler for longer flights with heavier payloads.

Dovetail is currently finalizing testing this architecture in both Spain and Australia with very positive results.. The tests form part of the integration roadmap for DovePack[™], which is designed to power certifiable retrofit aircraft under Dovetail's zero emissions electric propulsion architecture. These tests have successfully demonstrated the DovePack's[™] ability to prevent propagation of thermal events and maintain thermal stability under high stress conditions utilizing AmpCool[™] AC-110 dielectric coolant.

"Integrating immersion cooling with AmpCool[™] into our DovePack[™] system (Dovetail Electric Avaition's proprietary battery technology) allows us to build safer, lighter, and more compact batteries—something essential for zero-emission flight," said David Doral, CEO of Dovetail Electric Aviation. "Our mission is to make regional air travel fully electric, clean, and quiet—without compromising on safety. This collaboration marks a major step forward in enabling robust battery systems that meet aviation's toughest demands."

This collaboration marks a milestone in the future of sustainable aviation. With global attention on reducing carbon emissions in air travel, Engineered Fluids and Dovetail are tackling the key barrier to progress: enabling battery systems that meet the highest thermal and operational standards in flight

About Engineered Fluids

Engineered Fluids is the world leader in single-phase dielectric cooling solutions. Our fluids, including AmpCool[™], are designed for mission-critical applications in data centers, automotive, battery systems, and aerospace. We enable innovation by delivering unmatched thermal management, safety, and performance.

About Dovetail Electric Aviation

Dovetail Electric Aviation is transforming the future of regional air mobility by developing proprietary battery and electric propulsion systems to power the conversion of conventional aircraft into zero emissions. With operations in Australia and Spain, Dovetail's mission is to make

clean aviation commercially viable, scalable, and available to operators worldwide. Learn more at <u>www.dovetail.aero</u> and at <u>https://dovetail.aero/dovepack/</u>.

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