AI-Discovered Radiation Shielding Material to Undergo Near-Space Flight Test with Orbit2Orbit

EmTDLab's AI radiation shielding material takes first step toward space on Orbit2Orbit near-space balloon flight.

ESCH-SUR-ALZETTE, LUXEMBOURG, LUXEMBOURG, June 11, 2026 /EINPresswire.com/ -- EmTDLab Space Division SA and Orbit2Orbit Pty Ltd today announced they will flight-test a novel radiation shielding material, discovered using EmTDLab's AI platform Symade.ai, aboard a high-altitude balloon mission this summer.

Radiation remains one of the most significant technical barriers to long-duration human spaceflight and the reliable operation of satellites in high-radiation orbits. Traditional shielding solutions are often heavy, limiting payload capacity and mission economics. EmTDLab's AI-driven approach enables the rapid discovery and optimisation of new metal alloy compositions specifically engineered for superior radiation attenuation at lower mass.
The material candidate was identified through Symade.ai, which screens vast compositional spaces in simulation before physical manufacturing and testing. EmTDLab's platform and materials have been verified and validated in collaboration with the European Space Agency.

Under the agreement, a manufactured EmTDLab shielding plate will fly on Orbit2Orbit's Lab-to-Space programme. The initial flight will evaluate structural performance in the near-space environment. Radiation performance testing is scheduled for subsequent missions in the programme.

"Moving from computational discovery to a physical component flying in a relevant environment is a critical milestone," said Cedric R.G. Thiry, CEO and CTO of EmTDLab Space Division SA. "This flight marks the beginning of the transition from laboratory promise to flight-proven performance."

"Our staged Lab-to-Space approach allows partners to systematically reduce technical and programmatic risk before committing to orbital missions," said Bradley Hatton-Jones, Founder and CEO of Orbit2Orbit. "Flight heritage built through incremental, high-fidelity testing is the most credible way to prepare advanced materials for space."

The collaboration combines EmTDLab's expertise in AI-accelerated materials discovery with

Orbit2Orbit's structured pathway from ground testing through near-space to eventual orbital deployment.

About EmTDLab Space Division SA

EmTDLab is a Luxembourg-based deep tech company that uses its proprietary AI platform, Symade, to discover, design and qualify advanced materials for the most demanding environments, with a primary focus on space applications. The company works with the European Space Agency and leading aerospace organisations to accelerate the development of next-generation materials.

About Orbit2Orbit Pty Ltd

Orbit2Orbit is an Australian space company developing a progressive "Lab-to-Space" flight test pathway and, in the longer term, in-space logistics capabilities including cargo transfer between space stations. orbit2orbit.space

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