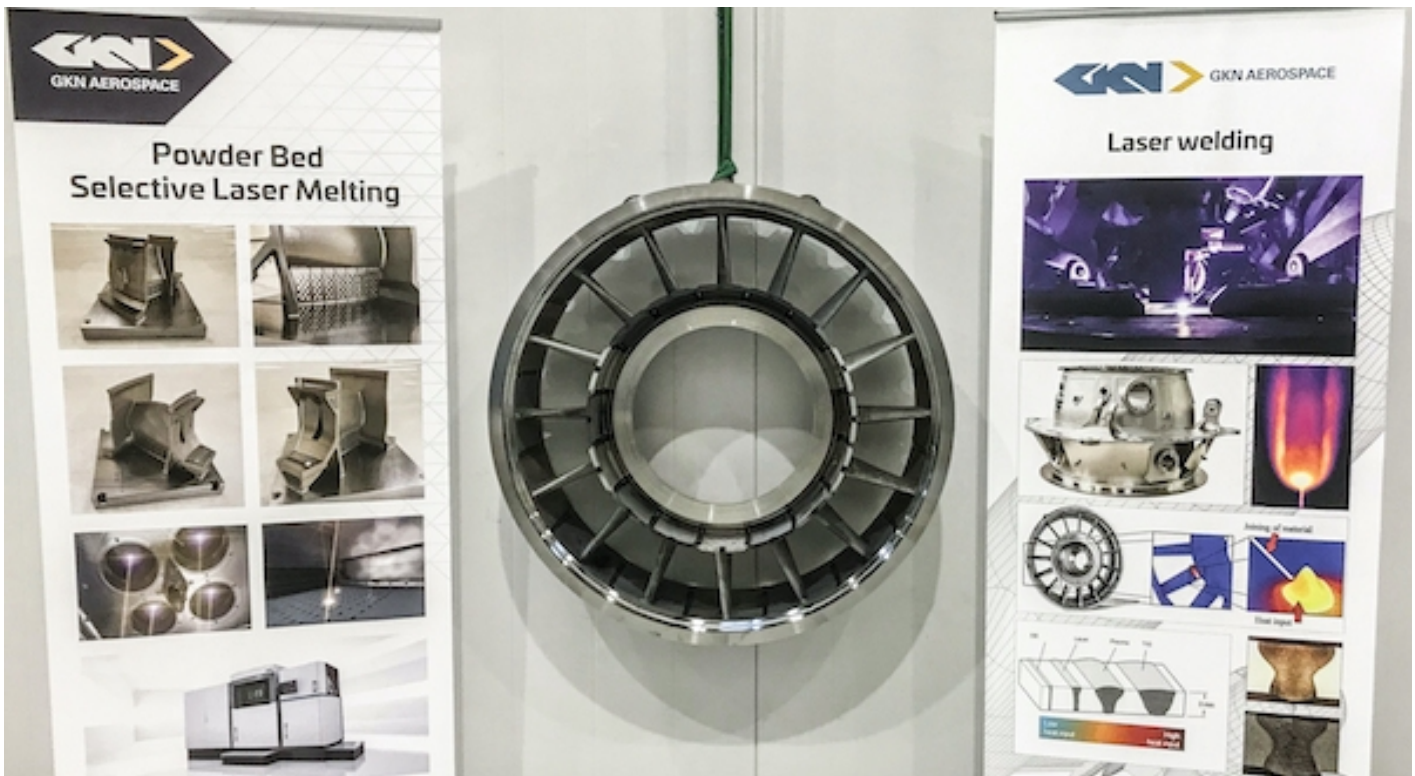




GKN AEROSPACE SUCCESSFULLY TESTS NEW LIGHTWEIGHT TURBINE REAR STRUCTURE CONCEPT

News / Manufacturer



GKN Aerospace engineers in Trollhättan, Sweden, have successfully tested a new lightweight demonstrator of a Turbine Rear Structure (TRS) as part of the Clean Sky-2 Engines research Programme. The purpose of a TRS is to manage the flow from the engine's low-pressure turbine and maximize the axial thrust. It is a key component in improving the efficiency of an aero-engine.

Innovative design and state-of-the-art manufacturing methods resulted in a shorter and lighter structure compared to a traditional TRS. This was achieved by using a novel metallic alloy with higher temperature capability, as well as both metal casting and 3D-printed technology. The optimized balance between aerodynamic performance, weight and mechanical properties demonstrates a significant (14%) weight reduction potential, contributing to lower carbon emissions of the engine.

The complex component was manufactured with laser-welded assembly methods and additive manufacturing technology at GKN Aerospace's Global Technology Centre in Sweden. Collaboration partners include the regional manufacturing technology centre PTC/Innovatum, while aerodynamic validation took place at a unique test facility at Chalmers University, funded by Vinnova through the SE NFFP programme. Brogren Industries (SME), also funded by Vinnova in the national SE Innovair programme INTDEMO MOTOR, provided supporting activities.

Henrik Runnemalm, Vice President for GKN Aerospace's Global Technology Centre in Trollhättan, Sweden, said: "At GKN Aerospace we put a sustainable future of aviation at the heart of our business and collaboration in the aerospace eco-systems is key to achieve this. The new TRS demonstrator is a great example of how National, Regional, EU and industry-funded activities are coordinated towards final validation of an innovative concept that will contribute to our NetZero journey."



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