

Mechanical Components and Systems

Gas turbine engines, electric machines, and other rotating systems for the future of flight continue to push the limits of power density, without sacrificing reliability or cost. The Mechanical Components and Systems Team at GE Aerospace, Research has both the component and system level expertise to push the state of the art and provide the right solutions for rotating machinery design and inspection.

Rotating Machinery

To achieve higher power density, rotor systems are being pushed to higher speeds, higher pressures, higher temperatures, and smaller diameters. The rotating machinery team is up for the challenge with advanced rolling element bearings, journal bearings, film-riding seals, gearbox technology, as well as full rotor system design, analysis, and testing capabilities.

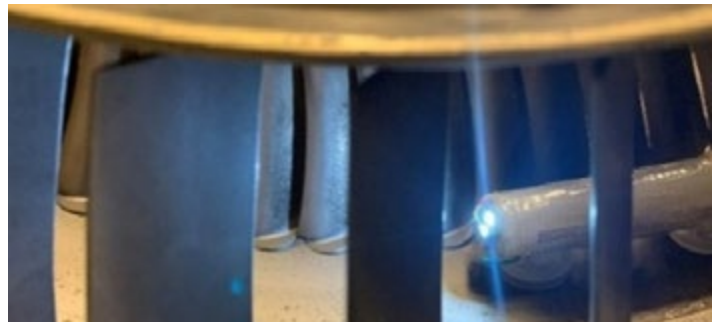
Experimental Facilities

The GE Aerospace, Research test facilities for rotating machinery can handle everything from material-level testing to component and sub-system testing, to full-scale rotating systems at high temperatures, pressures, and speeds. This team and facility can drive solutions through the full TRL 1→5 spectrum for gearboxes, air bearings, electric machines, and high temperature film riding seals. Enabled by our world class additive manufacturing, anything is possible.



Mechatronics

Aircraft operators need to keep engines on wing and in revenue or operational service. Avoiding costly engine teardowns with on-wing inspection and on-wing repair technology is a key focus for the Mechatronics team at GE Aerospace, Research. With expertise in confined space access, sensing and imaging, bio-inspired and soft robotics, and in-situ material removal and repair, this team can develop the right custom solution to keep the engine on wing and in service.



When it is time to tear down that engine, the Mechatronics team is ready with solutions for automated component inspection using robotic systems integrated with optical sensing systems to provide standardization and digitization of images. Removing human factors and standardizing images reduces cost, improves probability of detection of defects, and ensures that part history stays with that engine for its life.

What's Next

Whether you want to design a new rotor system, solve an issue with an existing design, or inspect or repair components you can't reach today, the Mechanical Components and Systems Team at GE Aerospace, Research is ready to partner.

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