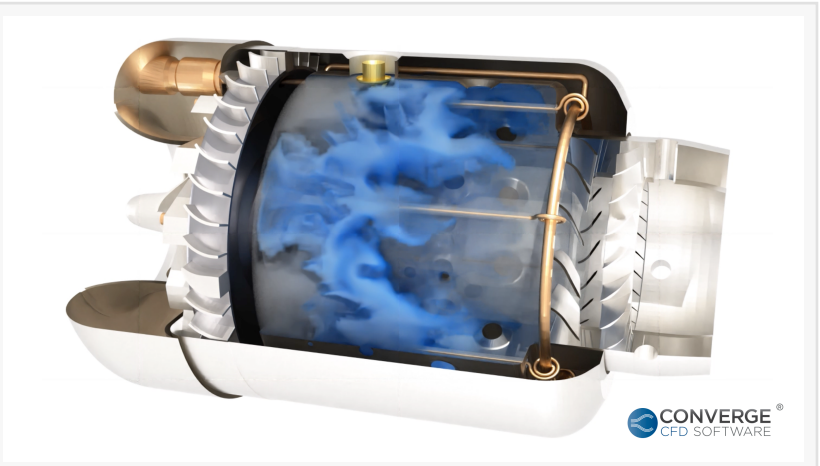
# CONVERGE CFD Software Advances Simulation Tools for Aerospace, Automotive, Energy Sectors With Release of Version 5

MADISON, WI, UNITED STATES, May 22, 2025 /EINPresswire.com/ -- Convergent Science recently released CONVERGE 5, a new major version of their CONVERGE CFD software. The new version offers expanded modeling options for a wide range of industries and applications, as well as new solver enhancements and pre-processing capabilities.



CONVERGE simulation of a hydrogen-fueled microturbine.

CONVERGE 5 includes many new models and features targeted to benefit certain application areas. The solver contains a new real-fluid model that can accurately represent fluids in both their gaseous and liquid states using a single equation of state. This capability is crucial for capturing the complex mixing and combustion dynamics within liquid rocket combustors. Version 5 additionally contains a variety of new modeling capabilities for electrical systems, such as battery packs, fuel cells, and electric motors. The new capabilities include models for electrochemistry, short-circuit events, and novel cooling strategies. In addition, CONVERGE 5 offers enhanced capabilities for internal combustion engines, including hydrogen engine simulations and knock prediction. The new version also introduces new models and features for urea/SCR aftertreatment systems, pumps and compressors, wind farms, oil & gas applications, gas turbine combustors, and biomedical applications.

In addition to the application-focused capabilities, CONVERGE 5 offers several new general solver enhancements. The new version includes a limited GPU solver that allows users to run basic CFD simulations on GPUs from any vendor. The new 1D flow solver can model flows in pipes or channels and can be coupled with the 3D flow solver to accelerate system-level simulations. Moreover, the Under-Relaxation Steady (URS) solver and the sealing capabilities in CONVERGE have been enhanced to improve stability and performance across application areas.

CONVERGE Studio, the graphical user interface for the software, includes a new machine

learning (ML) tool and a new CAD Editor module. The ML tool enables users to conduct rapid optimization studies based on advanced ML techniques. The CAD Editor contains a variety of tools for manipulating and modifying CAD geometries directly in CONVERGE Studio.

“With each major version of CONVERGE, we work to push the boundaries of what’s possible in CFD,” says Keith Richards, Co-Owner and Vice President of Convergent Science. “CONVERGE 5 greatly expands the capabilities and enhances the performance of the solver, providing our customers with access to more powerful tools to advance technology in their industry.”

Learn more about version 5 on the CONVERGE website.

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