

# CONVERGE CFD SOFTWARE OFFERS ENHANCED SPEED & ACCURACY WITH THE RELEASE OF VERSION 4

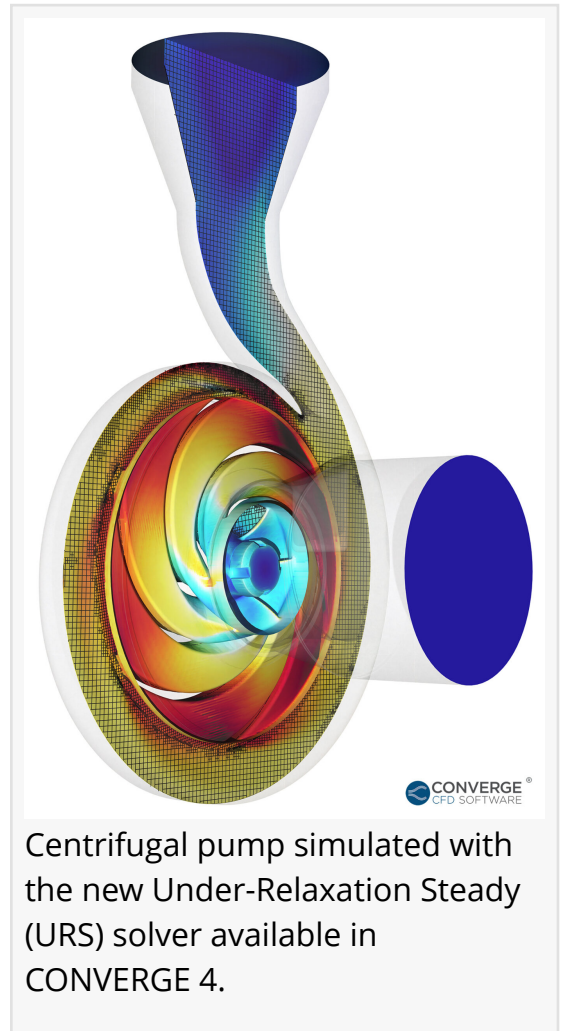
MADISON, WI, UNITED STATES, April 10, 2024

[/EINPresswire.com/](https://EINPresswire.com/) -- [Convergent Science](#) recently released CONVERGE 4, a new major version of their CONVERGE CFD software. Version 4 includes several new solver options that increase simulation speed and accuracy, a host of new modeling capabilities, and a variety of new tools that expand the software's functionality and improve user experience.

CONVERGE 4 introduces a new steady-state solver that offers up to 100 times speedup for certain steady-state simulations compared to the previous solver. For cases with axisymmetric characteristics, a new 2D axisymmetric solver can provide improved spatial accuracy at a substantially reduced computational cost compared to a sector or full geometry approach. Version 4 also includes a new technique called cross-stream synchronization that can accelerate transient simulations in which the time-scales are very different for different regions of the domain, for example, in some conjugate heat transfer cases.

The modeling capabilities of CONVERGE have been significantly expanded in version 4. CONVERGE's combustion models have been augmented to more effectively simulate [alternative fuels such as hydrogen](#) and ammonia and to more accurately capture spark ignition. The SAGE detailed chemistry solver can now be used to solve liquid-phase chemistry, applicable to problems including carbon sequestration and ocean acidification, and solid-phase chemistry, useful for modeling wildfires and battery reactions during thermal runaway.

For multi-phase simulations, CONVERGE 4 includes enhanced boiling and cavitation models as well as a new Multi-Fluid Multi-Field model that allows you to model multiple interspersed phases. These new models are beneficial for multi-phase applications in the marine sector and



oil and gas industry, among others. In version 4, a variety of tools for wind and wave specification—crucial for conducting realistic offshore simulations—have also been integrated into the software.

CONVERGE 4 additionally contains a variety of new discrete phase models for phenomena including condensation and urea deposit growth in aftertreatment systems, along with the capability to model parcels in multiple reference frame simulations. The electric potential solver has been enhanced in version 4 to allow you to solve for a pair of coupled electric potential fields, which is valuable for battery simulations. Furthermore, CONVERGE 4 offers a thin-gap model for simulating lubrication systems and sealing with leakage, as well as new rotor models for efficiently simulating applications such as wind turbines and quadcopter drones.

In addition to the new modeling capabilities, a variety of pre- and post-processing enhancements have been incorporated into version 4. CONVERGE Studio, the graphical user interface for CONVERGE, now includes a customized version of ParaView as a built-in module. The ParaView module has been tailored for CONVERGE users' needs, providing a seamless solution for data analysis and visualization. For pre-processing, users now have the option to create custom case setup panels, which display a user-defined subset of case setup inputs and parameters. Advanced users can generate these custom panels, which then offer a much simpler interface for end users who may not be CFD experts.

According to Keith Richards, Co-Owner and Vice President of Convergent Science, "CONVERGE 4 offers an array of new capabilities that allow users to simulate a broader range of applications with greater accuracy and faster turnaround time. We're excited for our customers to experience the benefits of this new version, which should enhance the user experience for clients across all market segments."

Learn more about version 4 on the CONVERGE website.

### About Convergent Science

Headquartered in Madison, Wisconsin, Convergent Science is a global leader in computational fluid dynamics (CFD) software. Our mission is to enable our customers to perform revolutionary CFD simulations by creating accurate, versatile, user-friendly software and providing unparalleled support.

Our flagship product, CONVERGE, is an innovative CFD software that eliminates the grid generation bottleneck through autonomous meshing and features a suite of advanced physical models, fully coupled detailed chemistry, and the ability to easily accommodate moving geometries. CONVERGE is revolutionizing the CFD industry and shifting the paradigm toward predictive CFD.

For more information about Convergent Science, please visit [convergecf.com](http://convergecf.com).

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