



**ENEOS**

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ENEOS Corporation

## **ENEOS to Accelerate AI-Driven Discovery and Optimization of New Lubricants and Immersion Cooling Fluids with NVIDIA ALCHEMI and PFCC Matlantis™**

ENEOS Corporation (President: Yamaguchi Atsuji) announces that ENEOS will enable AI-driven formulation optimization of chemicals and materials using NVIDIA ALCHEMI software and Preferred Computational Chemistry Inc. (PFCC) Matlantis™.

ENEOS has been leveraging Matlantis™, PFCC's universal atomistic simulator for materials discovery, to develop new catalysts, lubricants and polymers. As part of broader efforts to accelerate AI innovations in chemicals research and development (R&D), ENEOS will design and implement new AI solutions with NVIDIA ALCHEMI for developing more efficient and sustainable materials.

The collaboration aims to yield higher-performing products for ENEOS, with an initial focus on immersion cooling fluids for data centers. In today's rapidly evolving technological landscape, as data centers expand and workloads intensify, efficient thermal management becomes critical to maintain operational performance and cost effectiveness. There is an increasing need for higher performance fluids, such as high-wear resistant lubricants and coolants for more effective cooling systems in data centers. Utilizing AI can accelerate chemical discovery and foster innovative solutions, driving forward the capabilities of lubricants and cooling technologies.

A cornerstone of this approach is leveraging the capabilities of PFCC's Matlantis™. The simulator facilitates AI-enabled simulations of chemicals and materials, providing insights and advancements in innovation. Computational workloads will be run on the NVIDIA platform to take advantage of accelerated computing and software for accelerated computing. In addition, NVIDIA ALCHEMI can accelerate chemistry-specific computational workloads, ensuring more efficient simulations and more effective chemical representations of formulations using AI, as compared to traditional methods.

Furthermore, ENEOS's substantial domain expertise in chemicals and materials guides the development of AI solutions to achieve lubricants and immersion cooling fluids that meet target properties. Through this comprehensive approach, the aim is to drive significant improvements in industrial R&D processes, bolstering both efficiency and sustainability.

This effort aims to drive innovation efficiency and faster time-to-market for new products. Building on the success of this initial effort, ENEOS will expand our targets to include additional high-impact areas, like catalysis and polymer discovery.

ENEOS quotes

Yuichiro Fujiyama, Senior Vice President, ENEOS Corporation

ENEOS is committed to creating and driving innovation in the areas of energy, resources, and materials. This collaboration represents a significant step towards achieving that mission. By utilizing NVIDIA ALCHEMI in addition to Matlantis™, we are confident that our R&D will be significantly accelerated. Together with NVIDIA and PFCC, we will create new value and contribute to a sustainable future.

### **About immersion cooling fluids**

Immersion cooling directly cools all components of a server by immersing them in a non-conductive, single-phase cooling fluid. Compared to conventional air cooling, this system is significantly more energy-efficient, enhances processor performance, and creates a quieter data center. ENEOS markets single-phase immersion cooling fluids under the ENEOS IX series, which comply with environmental regulations and provide best-in-class cooling and long-lasting performance.