

NATIONAL ENERGY TECHNOLOGY LABORATORY ALBANY, OREGON



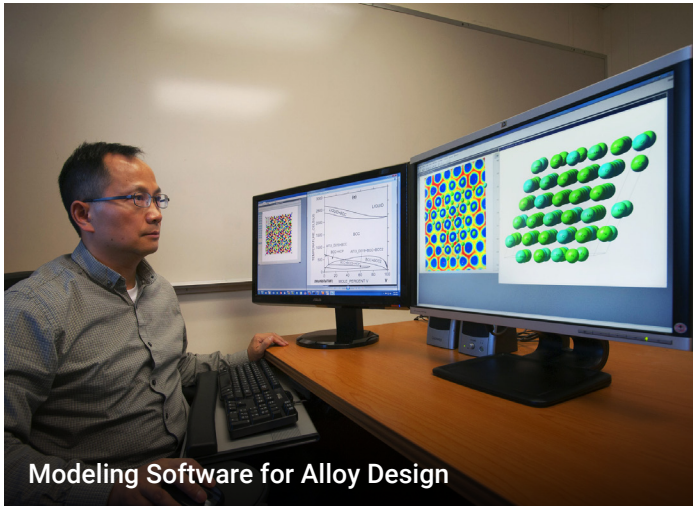
July 2026



NETL's Albany, Oregon, laboratory traces its origins to 1943, when President Franklin D. Roosevelt announced that the U.S. Department of the Interior's Bureau of Mines selected Albany as the site for the Northwest Electro-Development Laboratory. The laboratory was originally established to develop methods for processing the region's abundant low-grade resources using innovative metallurgical techniques and electrical energy. Over the decades, the site became a leader in materials science, contributing to breakthroughs such as the commercialization of the Kroll Process, which enabled the large-scale production of zirconium and other reactive metals essential to national security. These innovations laid the foundation for a thriving reactive metals industry, with several companies in Albany continuing this work today.

In 1996, Congress closed the Bureau of Mines and transferred the Albany laboratory to the Department of Energy's (DOE) Office of Fossil Energy (now the Hydrocarbons and Geothermal Energy Office). A decade later, in 2005, the Albany Research Center officially became part of NETL. This action strengthened the site's role in advancing materials performance and process development to support energy technologies.





Modeling Software for Alloy Design

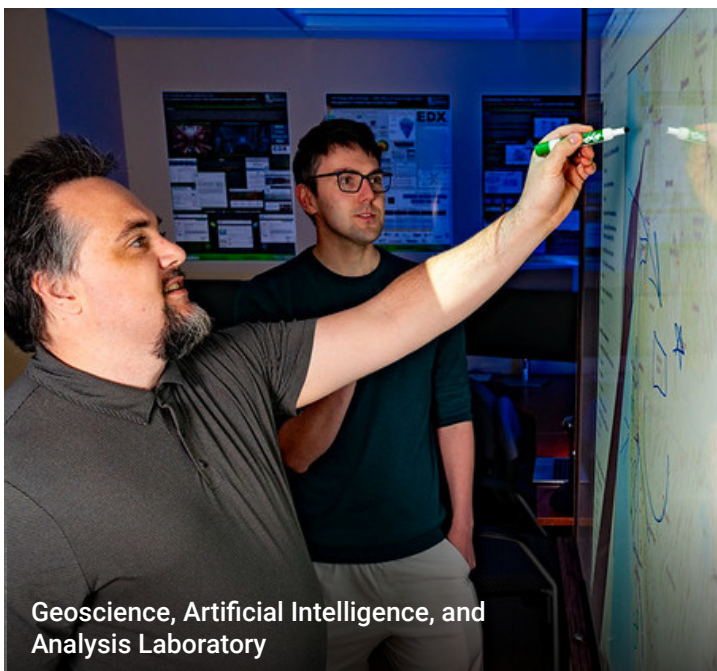
The laboratory has a rich history in energy innovation and is internationally recognized for significant contributions in materials research. In 1984, ASM International, the world's largest and most established materials information society, recognized the laboratory for pioneering the process of making ductile zirconium and designated the Albany site an ASM Historic Landmark. Other contributions include development of radiopaque alloys for medical coronary stents, a measurement technology developed for the specialty metals industry to identify arc distribution conditions during arc melting, enhanced processing methods to improve armor materials for military applications; computational tools for

heat treating and homogenization processing of alloys, and development of modified chrome-oxide refractory brick material that extended the service life of slagging gasifiers.

In May 2026, NETL launched the Critical Minerals & Advanced Alloys (CMAA) Center of Excellence at the Albany site. The CMAA Center serves as a strategic hub for R&D and partnerships between national laboratories and industry, academia, and other stakeholders to advance secure and resilient critical minerals supply chains through integrated research and technology development. The Albany site plays a key role in advancing applied energy technologies that support DOE's mission, with approximately 150 Albany-based NETL personnel dedicated to advancing the nation's energy future by creating solutions that strengthen the affordability, reliability, and security of energy systems and natural resources.

NETL researchers leverage computational tools, engineering expertise, and strategic partnerships to address national energy challenges. These include developing advanced alloys and materials designed for extreme environments, critical minerals and materials research, and artificial intelligence-driven geospatial data analysis.

Collaborations with industry, government agencies, and academia, including Oregon State University and the University of Oregon, help accelerate the transition of innovative solutions from the lab to real-world applications.



Geoscience, Artificial Intelligence, and Analysis Laboratory



Geosciences Laboratory

RESEARCH IN ACTION

NETL's Advanced Alloys Signature Center (AASC) is a key example of the cutting-edge research facilities based in Albany. AASC is a complete alloy development facility for prototyping alloy manufacturing that enables NETL and research partners to pilot alloy solutions at scales that translate to industrial practice. AASC helps companies and researchers create innovations that improve performance, reduce costs, and increase efficiency by solving problems related to material properties and manufacturing processes like corrosion resistance, strength, and durability.

AASC features a 13,000-square-foot melting facility for melt processing of alloys. Capabilities include:

- Vacuum Induction Melting
- Vacuum Arc Remelting
- Electroslag Remelting
- Electron Beam Melting
- Electric Arc Furnaces

Capabilities are wide ranging and have been leveraged by other DOE national laboratories, other government agencies, academic institutions, and U.S. industry to accelerate innovation for energy, defense, automotive, biomedical, and other applications.



Alloy Fabrication Laboratory



NETL is a U.S. Department of Energy (DOE) national laboratory dedicated to innovating and accelerating the nation's energy solutions in hydrocarbons, geothermal energy, and critical minerals production. The Lab further strengthens its impact by engaging with industry, academia, and other stakeholders through four strategically located Centers of Excellence: Coal, Critical Minerals & Advanced Alloys, Oil & Gas, and Geothermal. With research sites in Albany, Oregon; Morgantown, West Virginia; and Pittsburgh, Pennsylvania, NETL operates as one laboratory to create advanced energy technologies that support DOE's mission and enable affordable, reliable, and secure energy to fuel human prosperity.

