

Advanced Biocatalyst Successfully Demonstrated



[Cobalt Technologies](#) [1], a leading developer of next generation technology for the production of n-butanol, has announced the successful demonstration of one of its advanced biocatalysts. Partnering with the [U.S. Department of Energy's National Renewable Energy Laboratory](#) [2] (NREL), Cobalt completed multiple fermentation campaigns in a 9,000 liter fermenter, exceeding the target yield and other performance metrics for a commercial scale facility.

"Our strain demonstration comes on the heels of the successful demonstration of our pretreatment technology, proving our ability to map performance at the smallest scales all the way through demo scale," said Bob Mayer, CEO of Cobalt Technologies. "Ultimately, we're showing performance is achievable at commercial scale across our technology platform. This essentially eliminates the majority of scale-up risk associated with commercialization, which is vital for our customers and partners."

For this demonstration, Cobalt utilized the NREL Integrated Biorefinery Research Facility (IBRF) in the National Bioenergy Center facilities in Golden, Colorado, which is designed for large-scale fermentation and downstream processing. Using this test facility, Cobalt demonstrated its advanced biocatalyst's ability to convert non-food based substrates into renewable n-butanol. Tests resulted in high sugar conversion (the amount of sugar consumed by the bacteria) and high yields of butanol (the amount of butanol produced by the bacteria).

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"NREL is dedicated to advancing the cleantech industry and continually look for ways to further the intellectual capital and clean technology endeavors across the country," NREL Team Leader for Partnership Development John Ashworth, said. "Our bioprocessing fermentation facilities can be used by non-DOE academic institutions and companies like Cobalt Technologies to conduct test trials, prove technology or even advance technology processes. We were pleased to witness the successful demonstration of Cobalt's specialized biocatalyst at our facility."

Overall, the advanced biocatalyst fermentation demonstration not only validates the ability of Cobalt's Non-GMO biocatalyst to perform at commercial scale, but also confirms that the Cobalt process to produce renewable butanol is 40 to 60 percent less expensive than production of petroleum-based butanol using the traditional oxo-alcohol process. This positions Cobalt to be able to quickly move to commercial scale fermentations with its key strategic partners.

While Cobalt's technology has the ability to perform on a continuous basis, this testing was conducted using batch processes to fully demonstrate the flexibility of the technology to meet the needs of potential customers and partners. The butanol produced during this demonstration will be sent to several customers for product certification. Company-specific certification will allow Cobalt's renewable n-butanol to be incorporated into existing chemical-based products like paints, solvents or plastics.

About Cobalt Technologies

Cobalt Technologies is a leader in commercializing the production of bio n-butanol as a renewable chemical and fuel. N-butanol is a widely used industrial chemical found in paints, lacquers and other surface coatings, with a global market of over \$5 billion. By producing low-cost bio n-butanol, Cobalt's unique technology enables the use of n-butanol as a platform molecule for the production of a broad array of fuels and chemicals, including jet fuel, bio-based plastics and synthetic rubber. Cobalt's technology platform offers a continuous process to efficiently convert diverse non-food feedstocks into biobutanol. Engineered to achieve low costs through its proprietary biocatalyst, advanced bioreactor and energy efficient design and the use of low-cost feedstock, Cobalt is making biobutanol and its derivatives a cost-effective substitute to petroleum-based chemical products.

For more information, please visit www.cobalttech.com [1].

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[1] <http://www.cobalttech.com/>

[2] http://www.nrel.gov/biomass/national_bioenergy.html