

For Immediate Release

Latest Genomatica Patents Enable Sustainable Nylon, Low-cost Chemicals

Additional proof of greening existing products; more feedstock flexibility for chemical industry

SAN DIEGO, Oct. 19, 2010 – [Genomatica](#) has received two foundational patents from the United States Patent and Trademark Office that further enable its product strategy and feedstock flexibility. Together, these two research breakthroughs demonstrate how to “green” nylon, one of the most common materials in hundreds of consumer products, and how to gain further cost advantages when manufacturing sustainable chemicals and the materials made from them. Coupled with Genomatica’s strategy of partnering with the chemical industry, these latest milestones speed a transition to a more sustainable chemical industry, both environmentally and economically.

Breakthrough enables sustainable nylon

Patent number [7,799,545](#), titled “Microorganisms for the production of adipic acid and other compounds,” describes how to produce a “green” version of key intermediate chemicals used to produce nylon. Genomatica’s patent describes organisms that use renewable feedstocks, or raw ingredients, such as commercially-available sugars, instead of crude oil or natural gas. These organisms directly produce adipic acid and 6-aminocaproic acid (6-ACA), which can be used to produce nylon 6,6 and nylon 6, respectively. Over 10 billion pounds of nylon are used per year, worldwide, in clothing, stockings, carpet and more. Production of these green intermediates would allow a renewable, sustainable nylon, using existing manufacturer equipment and processes, and with a smaller environmental footprint.

Breakthrough allows for more feedstock flexibility and lower cost

Patent number [7,803,589](#), titled “Methods and organisms for utilizing synthesis gas or other gaseous carbon sources and methanol,” describes how to engineer an organism to use syngas as a feedstock to make green, sustainably produced versions of major chemical products. This is significant because syngas is generally less expensive than other renewable feedstocks, and can be sourced from a wide variety of raw materials including biomass or municipal solid waste – garbage. Genomatica’s invention provides a platform for creation of numerous, major high-value chemicals, at lower cost.

Syngas is produced throughout the world from natural gas or liquid hydrocarbons, and through the gasification of coal, biomass and waste materials. Syngas is a low-cost input material often used to generate power in the form of electricity, and can also be converted into liquid fuels. Prior to Genomatica, converting syngas to chemicals could only be done through chemical processing techniques, which were generally energy-intensive and limited in their ability to produce specific chemical products. Now, Genomatica’s patent describes how they can use their bio-technology to design organisms to efficiently and economically convert syngas into specific target chemical products. This is analogous to how Genomatica has designed and engineered organisms to convert sugars into 1,4-butanediol (BDO), a non-naturally occurring chemical that is widely used.

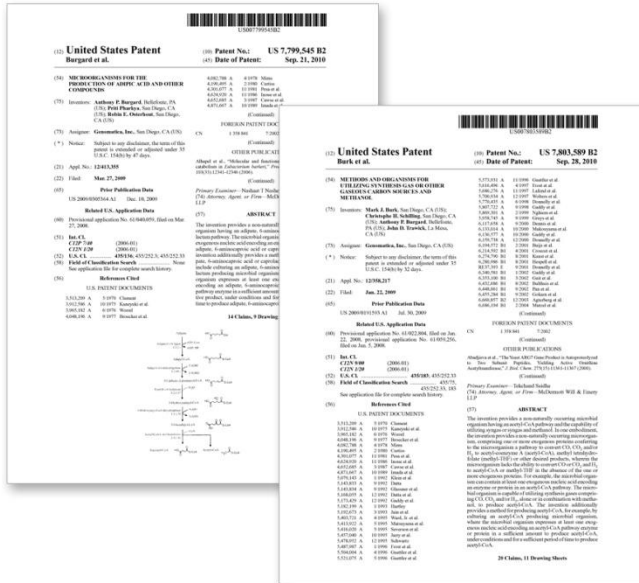


Figure 1: Genomatica's latest patents enable sustainable nylon, and the use of syngas as a low-cost feedstock for production of major chemicals.



Figure 2: One of Genomatica's patents describes how to use syngas as a raw material, or feedstock, for the production of major chemicals. Shown here: plant producing syngas from municipal solid waste. Picture, courtesy of Enerkem.

Extensive intellectual property on bio-based production of major chemicals

Genomatica now has numerous patents that have been issued directly to the company or exclusively licensed to it, along with [19 published patent applications](#), and more than 100 patent filings.

“We’re focused on working with our partners to transform the chemical industry – using renewable inputs to make the same great products, but at lower cost and with smaller environmental footprint,” said [Christophe Schilling](#), CEO of Genomatica. “We’ve developed extensive intellectual property on products that represent the core of the chemical industry to help in achieving that.”

Markers of commercial expansion

The new patent issuances mark continued rapid progress for Genomatica toward full commercialization. This includes a successful move to [pilot production](#) for the company’s first commercial product, a “green” [Bio-BDO](#), made from renewable feedstocks rather than oil or natural gas. BDO, an intermediate chemical with a \$4 billion market worldwide, is used to make spandex, automotive plastics, running shoes and more.

Genomatica’s IP and [technology platform](#) provide the underpinnings for Genomatica and its partners to develop and produce green versions of a range of intermediate and basic chemicals with large, existing markets. Additionally, the technical underpinnings for feedstock flexibility allow for continued cost reduction and making choices based on local markets.

About Genomatica

[Genomatica](#) is the emerging leader in sustainable chemicals: “greener” intermediate and basic chemicals made from current and next-generation renewable feedstocks, rather than oil and gas. The company aims to transform the chemical industry through cost-advantaged, smaller-footprint products as direct replacements in a trillion-dollar global market. Genomatica is in [pilot production](#) with its first commercial product, Bio-BDO, which has a \$4 billion market worldwide.

The company’s unique integrated bio-process engineering platform allows ‘*in-silico*’ (computer-based) design and testing of highly-optimized organisms, manufacturing processes and economics. This results in much faster product development and time to commercial-scale manufacturing, as well as lower production costs. The platform has been proven in the record speed of pilot validation of Genomatica’s first product, BDO; in partnerships with Dow, DSM, Unilever, NatureWorks/Cargill, Kyowa Hakko, and Verenum; and in over 30 peer-reviewed projects funded by the National Institutes of Health, National Science Foundation, Department of Energy, Department of Defense and Environmental Protection Agency. Genomatica has developed extensive intellectual property for clean, industrial biotechnology, including numerous issued and pending patents, and IP on the pathways and/or strains for 20 of the top intermediate and basic chemicals.

Genomatica has raised \$40 million from Alloy Ventures, Draper Fisher Jurvetson, Mohr Davidow Ventures, and TPG Biotech. See www.genomatica.com for more info.

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