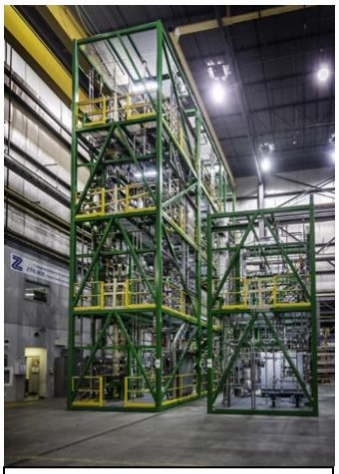
Anellotech

Anellotech and Suntory Enter Next Phase of Strategic Partnership to Develop 100 Percent Bio-Based Plastics for Sustainable Beverage Bottles

Construction completed, installation to commence on fully-integrated development and testing facility on plan to be operational in 2016



Anellotech's TCat-8 development and testing unit for converting biomass to BTX. *Photo courtesy of Zeton Inc.*

Pearl River, New York –January 13, 2016 – Anellotech, a sustainable technology company focused on producing cost-competitive renewable chemicals from non-food biomass, today announced that the Company has entered into the next phase of its strategic partnership with Suntory Holdings Limited, one of the world's leading consumer beverage companies. Suntory's diverse market-leading beverage brands include Orangina, Schweppes, Ribena, Lucozade and BRAND'S, as well as major alcohol brands, Yamazaki, Hibiki, Jim Beam, Courvoisier, and Château Lagrange.

The partnership, which began in 2012 under a collaboration agreement that has provided more than $15 million in funding to date, is focused on advancing the development and commercialization of cost-competitive 100 percent bio-based plastics for use in beverage bottles as part of Suntory's commitment to sustainable business practices. Suntory currently uses 30 percent plant-derived materials for their Mineral Water Suntory Tennensui brands and is pursuing the development of a 100 percent bio-bottle through this partnership.

The Anellotech alliance with Suntory supports the development of bio-aromatics including bio-paraxylene, the key component needed to make 100 percent bio-based polyester (polyethylene terephthalate, or "PET") for use in beverage bottles. As an integral component in the bio-based value chain, Anellotech's proprietary thermal catalytic biomass conversion technology (Bio-TCat^{TM}) cost-competitively produces "drop in" green aromatics, including paraxylene and benzene, from non-food biomass.

Today's announcement marks a major milestone in making 100 percent bio-based polyester and bio-based PET bottles a reality. With construction now complete on its new, fully-integrated development and testing facility (TCat-8™), Anellotech is ready to

commence installation with groundbreaking scheduled for late January 2016. Operational in 2016, this 25 meter-tall unit will confirm the viability and suitability of the Bio-TCat process for scale-up, and generate the data needed to design commercial plants using Bio-TCat technology. The TCat-8 unit was jointly designed by Anellotech and its R&D partner IFPEN, and will use a novel catalyst under joint development by Anellotech and Johnson Matthey. After verification of the continuous operation of TCat-8, Suntory plans to move ahead with studies to consider the development of the first commercial-scale Bio-TCat plant.

"By focusing on the development of substitute materials to replace petroleum in making everyday consumer products, we are expanding our commitment to reduce the environmental burden of beverage packaging, including reduction of CO_2 greenhouse gas emissions," said Munehiko Takada, head of Packaging Material Development Department at Suntory. "We are pleased with the progress Anellotech and its industry-leading partners have made, which gives us confidence in their ability to develop and commercialize a sustainable and cost-effective process for producing bio-based aromatics."

Suntory joins Anellotech's existing partners IFP Energies nouvelles (IFPEN), Axens, Johnson Matthey, and a multinational corporate investor, which has provided a $7 million equity investment, the first tranche of a total $10 million investment.

"We are pleased to enter the next phase of our partnership with Suntory and further advance our technology to meet growing consumer demand for products and packaging made from sustainable sources," said David Sudolsky, President and CEO of Anellotech. "Anellotech and some of its alliance partners are already doing preliminary work to identify potential feedstocks, sites and operating partners for an initial commercial plant. With Suntory's focus on bio-paraxylene, Anellotech can now offer a unique opportunity to new partners interested in bio-benzene-chain derivatives. This includes nylon, polycarbonate, linear alkyl benzene for laundry detergent, and styrene for styrene butadiene rubber."

By starting from cost-advantaged feedstock and employing a solid catalyst in just one fluid-bed reactor, Anellotech's process can produce the 100 percent bio-based aromatic chemicals that are used to make many significant plastics. By going directly from biomass to BTX in this one reactor, Anellotech does not make a highly-oxygenated bio-oil intermediate product often seen in multi-step pyrolysis processes, and avoids the need to add substantial amounts of costly hydrogen.

The Need for an Alternative

Approximately 54 million metric tons of PET are manufactured globally each year. Despite strong industry demand, there is no commercially-available, bio-based paraxylene on the market today. This has limited the ability to make 100 percent bio-based PET at commercial scale. By using Bio-TCat technology, Anellotech and its partners are accelerating the development of bio-based paraxylene and other widely-used chemicals including benzene, toluene and other xylenes (commonly known as BTX) from non-food sources. This will allow for the first cost-effective production and commercial realization of 100 percent bio-PET bottles for consumer use.

The ultimate competitive advantage of Bio-TCat over fermentation-based technologies is derived from Anellotech's use of a simple process performed in one reactor-catalyst system. Other than biomass and catalyst, there are no further inputs, apart from minor amounts of hydrogen used downstream of the reactor to remove trace impurities prior to further separation of the BTX. As a result, these bio-based aromatics can be sold profitably against their identical, petroleum-derived counterparts. Furthermore, because it uses renewable and abundant non-food feedstocks, such as wood, corn stover and bagasse, the Bio-TCat process is less expensive compared to those that use sugar-based feedstock, and avoids competition with the food chain.

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About the Anellotech Partnerships

Anellotech complements its world-class R&D team with in-depth, highly-interactive, and long-term partnerships with leaders in process development, catalysis, engineering design, and licensing to accelerate development and drive cost-competitiveness. IFPEN is our process development and scale-up partner, Johnson Matthey is our catalyst development partner, and Axens is our partner for industrialization, commercialization, global licensing and technical support. Industry-leading strategic partners in the BTX supply chain, including Suntory and another multinational corporate investor, have provided capital to Anellotech. These high-caliber, results-oriented partnerships provide the critical mass of expertise and market presence for the successful commercialization of the Bio-TCat process technology.

Our development partners' involvement is driven by future licensing and engineering services revenues and catalyst sales to licensees, while our operating company partners

are motivated by obtaining early access to cost-competitive bio-aromatics. This ensures an end-to-end collaboration with a focus on technical and process economic success.

Anellotech continues to seek additional funding and strategic partners to support the development of the Bio-TCat technology and participate in its future success. These include companies interested in cost-competitive bio-based benzene and toluene and their derivatives, complementing Suntory's strong interest in bio-paraxylene. The technology also appeals to refiners with aromatics processing capability or interest in aromatics as high-octane, non-oxygenated blend stock for gasoline, biomass suppliers and others in the supply chain.

About the 100 Percent Bio-Based PET Bottle

Renewable resource-based processes to produce "drop in" green aromatics need to be cost-competitive with conventional petroleum feedstocks to be accepted by the industry. With Anellotech's Bio-TCat technology, non-edible biomass is converted into BTX. Using existing, globally-available chemical processes, toluene can be further converted into benzene and more xylenes, and the xylenes into purified paraxylene, which is then converted into terephthalic acid (PTA). PTA can be polymerized together with mono-ethylene glycol (MEG) in a 70/30 ratio into PET resin for plastic bottles. Renewable bio-MEG produced from sugar cane has already been introduced in some PET containers, including Mineral Water Suntory Tennensui sold in Japan. By replacing fossil-derived paraxylene with identical plant-based material, production of 100 percent renewable PET becomes possible.

About Anellotech

Anellotech is a green innovation and technology company developing an efficient and eco-friendly process for producing bio-based BTX from non-food biomass. We use proprietary breakthrough technology to provide these sustainable chemical building blocks, as an alternative to their identical counterparts derived from fossil sources. By using biomass as a source feedstock for aromatic chemicals, Anellotech is helping broaden the world's access to renewable chemical and energy sources, while lowering these chemicals' lifecycle carbon footprint to help reduce greenhouse gas emissions.

About Suntory

Suntory Group, a $20 billion annual sales company, was founded in Osaka in 1899. The company, headquartered in Japan, is a world-leading manufacturer of alcoholic and

non-alcoholic beverages that operates a wide range of businesses in Asia, Oceania, Europe, and other regions globally. Suntory manufactures and markets a diverse range of brands, including Orangina (Europe and Asia), Schweppes (Europe, apart from the U.K. and Ireland), Lucozade and Ribena (U.K.), and BRAND'S (Asia). Suntory also manufactures and markets a variety of top-quality alcoholic beverages, such as world-renowned Japanese whisky brands Yamazaki and Hibiki, beer including The Premium Malt's, as well as wine produced in collaboration with the famed winery, Château Lagrange. In May 2015, Suntory purchased 100 percent of Beam Inc. (U.S.) for $16 billion dollars and subsequently founded Beam Suntory Inc. The company is currently enhancing sales efforts for Jim Beam, Courvoisier, and Maker's Mark, among other noteworthy products. The Suntory portfolio also includes restaurant businesses with a focus in Mexican and Asian countries, as well as flower businesses that created the world's first blue roses.

Based on Suntory's corporate philosophy, "In Harmony with People and Nature," the company is pursuing various activities to reduce its environmental impact, which will help safeguard our planet for the next generation. Particularly, in the area of containers and packaging, Suntory has begun working on the development of bio-based PET bottles within the "2R + B" strategy (reduce + recycle + bio). Suntory is committed to achieving a more efficient use of resources by replacing petro-derived materials with renewables, reducing the amount of resin used in packaging, and increasing utilization of recycled materials. In order to "reduce," Suntory advocates making everything lightweight –not just the beverage bottles themselves, but also labels and caps. With respect to "recycle," Suntory has established the first bottle-to-bottle mechanical recycling system in Japan. Lastly, for "Bio," Suntory currently uses 30 percent plant-derived materials for their Mineral Water Suntory Tennensui brands.

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