Dow and OPXBIO Collaborating on Renewable Route to Acrylic Acid

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Companies Focus on Commercial Viability of Production Process Using Renewable Feedstocks

MIDLAND, Mich. & BOULDER, Colo.--(BUSINESS WIRE)--The Dow Chemical Company (NYSE: DOW) and OPX Biotechnologies, Inc. (OPXBIO) announced today that the two companies are collaborating to develop an industrial scale process for the production of bio-based acrylic acid from renewable feedstocks.

Dow and OPXBIO recently signed a joint development agreement to prove the technical and economic viability of an industrial-scale process to produce acrylic acid using a fermentable sugar (such as corn and/or cane sugar) feedstock with equal performance qualities as petroleum-based acrylic acid, creating a direct replacement option for the market. If collaborative research is successful, the companies will discuss commercialization opportunities that could bring bio-based acrylic acid to market in three to five years.

“At Dow, we engage in collaborations that foster and drive innovations that lead us to breakthroughs throughout all areas of our Company,” said Monty Bayer, global business director, Dow Ventures & Business Development, Licensing and Venture Capital. “Dow and OPXBIO have strong technical synergies and discovering and capitalizing on those synergies is one avenue to develop and bring innovative and sustainable solutions to the market.”

Dow, a leading global producer of acrylic acid and esters, will provide its expertise in industrial chemistry, process optimization and product development. OPXBIO, a company that uses biotechnology to convert renewable raw materials into biochemicals and fuels, will contribute its expertise in strain development and bioprocessing utilizing its EDGE™ (Efficiency Directed Genome Engineering) technology. The EDGE™ technology platform enables OPXBIO to engineer high-performing microbes and bioprocesses more effectively and efficiently compared to conventional genetic engineering methods.

The global petroleum-based acrylic acid market is $8 billion and growing 3 to 4 percent per year. Acrylic acid is a key chemical building block used in a wide range of consumer goods including paints, adhesives, diapers and detergents.

“Dow is interested in bio-based products that are economically competitive to petrochemical-based products with equal or advantaged performance qualities,” said Pat Gottschalk, business director and vice president, Dow Performance Monomers. “Through the use of innovative technologies and sustainable raw materials, this project may enable Dow to diversify its product offerings for customers.”

During an 18-month pilot-scale program, OPXBIO demonstrated with unprecedented speed and capital efficiency that its EDGE™ technology enables the manufacture of acrylic acid using renewable feedstock. A life cycle analysis conducted by Symbiotic Engineering, a greenhouse gas and sustainability consultant, concluded that OPXBIO’s production process can reduce greenhouse gas emissions by more than 70 percent when compared to traditional petroleum-based acrylic acid production.

“Together with Dow, we aim to deliver bio-based acrylic acid to the market that is cost-competitive and more sustainable,” said Charles R. (Chas) Eggert, president and chief executive officer of OPXBIO. “Building on our own successful pilot-scale development and leveraging Dow’s chemical processing and purification expertise will enable us to accelerate demonstration-scale activities and validate the performance of a bio-based acrylic acid in multiple applications.”

About Dow

Dow (NYSE: Dow) combines the power of science and technology with the "Human Element" to passionately innovate what is essential to human progress. The Company connects chemistry and innovation with the principles of sustainability to help address many of the world’s most challenging problems such as the need for clean water, renewable energy generation and conservation, and increasing agricultural productivity. Dow's diversified industry-leading portfolio of specialty chemical, advanced materials, agosciences and plastics businesses delivers a broad range of technology-based products and solutions to customers in approximately 160 countries and in high growth sectors such as electronics, water, energy, coatings and agriculture. In 2010, Dow had annual sales of $53.7 billion and employed approximately 50,000 people worldwide. The Company's more than 5,000 products are manufactured at 188 sites in 35 countries across the globe. References to "Dow" or the "Company" mean The Dow Chemical Company and its consolidated subsidiaries unless otherwise expressly noted. More information about Dow can be found at www.dow.com.
About OPXBIO

OPXBIO uses its proprietary leading EDGE™ (Efficiency Directed Genome Engineering) technology to manufacture renewable bio-based chemicals and fuels that are lower cost, higher return, and more sustainable than existing petro-based products. With unprecedented speed and capital efficiency, in just 18 months OPXBIO has developed and piloted the microbe and bioprocess that will produce its first renewable chemical product – BioAcrylic – at lower cost than petro-acrylic with a 75% reduction in greenhouse gas emissions. The company’s second product is diesel fuel bio-processed from carbon dioxide and hydrogen. For more information, visit http://www.opxbio.com.

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