DMC Biotechnologies: Transforming How the World Makes Chemicals

**Summary:**

DMC Biotechnologies is a US-based biomanufacturing company that uses engineered microbes to sustainably and cost-effectively produce chemicals used in many market applications.

The company’s patented technology is the only innovation in the field today that was specifically created to enable biomanufacturing at commercial scale and to address the historical barriers that have plagued the field for decades. The net result is unprecedented efficiency in the development and deployment of products that address two of the most pressing global challenges of our time: decarbonization and improving the security of fragile supply chains.

Humans have used fermentation since antiquity to create beer and bread, but the applications to date have largely been limited to what the microbe naturally produces. For example, yeast ferment sugars and make ethanol and CO2; the former providing the kick for beer and the latter being responsible for the dough rising. More recently, the ability to engineer microbes has created the potential to make many more types of chemicals using precision fermentation with improved sustainability and attractive economics compared to other manufacturing approaches. This creates the opportunity to reimagine how everyday products are made with applications that range from personal care to nutrition to the composite materials that we rely on every day.

Traditional methods of engineering microbes have fallen short. Complicated, slow, and costly, these artisanal approaches have required scientists to start the development process from scratch every time - and with unpredictable results. DMC Biotechnologies’ precision fermentation process was designed with the desired end in mind: a process that is standardized and applicable to all product chemistries, a process that is robust across a broad range of conditions anticipated at full scale, and a process with predictable performance for any product at scale. This holistic approach and breakthrough technology are ushering in the next transformative wave of biotechnology with global implications.

The technology platform splits the process into two stages - the first where microbes are cultivated (growth), and the second where the microbes produce a desired product at target metrics (production). This enables the process to be maximally efficient in each stage (growth and production). The microbes “rewire” their metabolism in real-time thus switching from what they have evolved to do (grow) to what the engineers program them to do (produce a product). By analogy, consider the cultivation of apple trees: initially, the farmer must grow the tree, but at some point, the farmer begins to prune the tree in a way that directs its energy to the production of apples. The DMC technology platform may be viewed as dynamically “pruning” the native microbial metabolism to deliver efficient production of the desired product.

The end result is a predictable and proven process that has been deployed to produce many different products. The unprecedented efficiency in development time and cost allows chemical producers to give consumers environmentally friendly choices, strengthens domestic manufacturing, and improves supply chain resiliency.

**A Proven Leader Advancing Sustainability in Industrial Biotechnology**

The growing field of industrial biotechnology is transformative for the climate, producing essential components in everyday products without harmful environmental effects. This is significant, given that the U.S. chemical industry’s greenhouse gas emissions are reported to be over 200 million metric tons per year.

But addressing this challenge effectively requires scale.

The standard that DMC Biotechnologies has set with its proprietary technology means shorter development time and costs, enabling the industry to launch more products and get them to scale in unprecedented time. It’s this speed and efficiency that is a vital part of the solution to reducing the industry’s carbon footprint.

For example, independent, third-party analysis of DMC’s first commercial product has forecast a reduction in CO2 emissions by more than 90 percent as compared to the incumbent process. This is equivalent to removing more than 62,000 cars from the road each year.

DMC Biotechnologies stands at the forefront of the field, creating a more sustainable global economy by using biology to transform how the world makes chemicals.

**History**

DMC Biotechnologies was founded in 2014 in Boulder, Colorado by Dr. Matthew Lipscomb and Dr. Mike Lynch, chemical engineers who met in grad school and set out to address key barriers in the field of industrial biotechnology. They first collaborated on a biotechnology venture called OPX Biotechnologies, which was acquired by global agricultural giant Cargill. Having experienced first hand the labors, frustrations, and challenges of engineering biology, they were inspired to develop a better approach that addressed these challenges.

Their groundbreaking approach has fueled the growth of the company to include a team of talented leaders, engineers, scientists.

It is also supported by world-class investors. The company raised $53 million in total funding across multiple rounds, including a Seed Round, Series A & B rounds as well as grants from notable institutions like the National Science Foundation, the US Department of Energy, and the U.S. Department of Agriculture.

Their first round of equity funding in 2018 was led by Belgium-based Capricorn Partners and the Bill Gates and Jeff Bezos-backed Breakthrough Energy Ventures, with subsequent rounds in 2019 and 2022 bringing in Cibus Fund, Sofinnova Partners, Boulder Ventures, SCG, Michelin, Conti Ventures, and Toyobo into the fray.

To support the growing and innovative field of metabolic engineering, DMC Biotechnologies sponsors internships from university programs including Dartmouth, Duke, and the University of Colorado.

DMC Biotechnologies has a growing pipeline of bio-based chemicals that it will deploy over the coming decade.

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