

Challenges / Timing / Application areas of fermenters

Timing is one of the most important factor for a startup to be a success story

43 Billion USD

Vaccines, Tissue engineering

Bioreactors are widely used in cell culture-based viral vaccine production, and to grow tissues and organs in vitro for medical applications, such as replacement tissues for transplantation.

13 Billion USD

Tailored medicine, Gene therapy

E.g. a patient's DNA can be used to predict their likelihood of developing certain diseases or conditions, and biofermentation can then be used to produce tailored treatments specifically for that individual with less side effects.

Over dosage of antibiotics

Covid, epidemics

450 million USD

CO2 removal/ reduction

Microbial electrosynthesis or bioelectrochemical synthesis: In this process, the microbes use electrical energy from an external source, such as a solar panel or wind turbine, to convert CO2 into fuel. This technology has the potential to provide a sustainable and carbon-neutral source of fuel, as it uses CO2 as a feedstock instead of fossil fuels.



8 Billion USD

Beauty industry

Hyaluronic acid is often produced by fermenting certain types of bacteria.

Social media

719.2 million USD

Food&beverages industry

Fermented foods are rich in beneficial probiotics and have been associated with a range of health benefits — from better digestion to stronger immunity

Lack of precious ore

604 Billion USD

Mining

Microbial processes applied to mining operations are gaining increasing interest in the last years. Potential and current applications include the mining of gold, copper and other heavy metals, desulfurization of coal and oil, tertiary recovery of oil and biosorption of metal ions.

Junk food

137 Billion USD

Biodiesel, biofuel

Biodiesel is a renewable fuel made from organic matter, such as vegetable oils and animal fats, that can be used as a substitute for diesel fuel. One of the methods of producing biodiesel is through fermentation of microorganisms.

80 Billion USD

Waste water treatment

Two-stage anaerobic reactors have been used for the treatment of wastewater with high COD and sulfate concentrations

Pollution

Need for Fuel