



Agile Biofoundry CRADA Project - Visolis

Title:

Production of High-Value Chemicals from Renewable Feedstocks

Project Partners:

National Renewable Energy Laboratory, Oak Ridge National Laboratory, & Visolis

Relevant ABF Capability(ies):

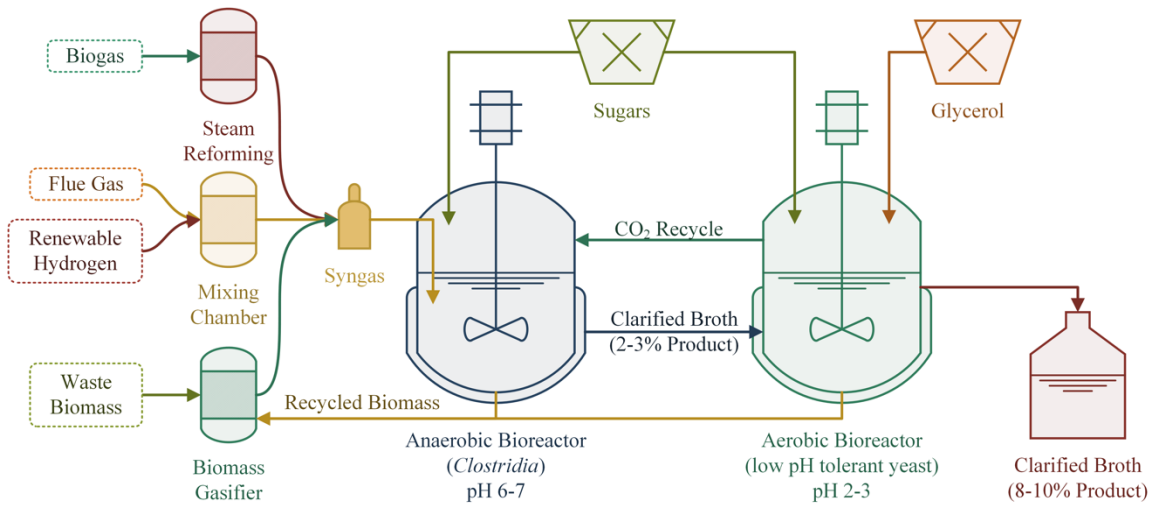
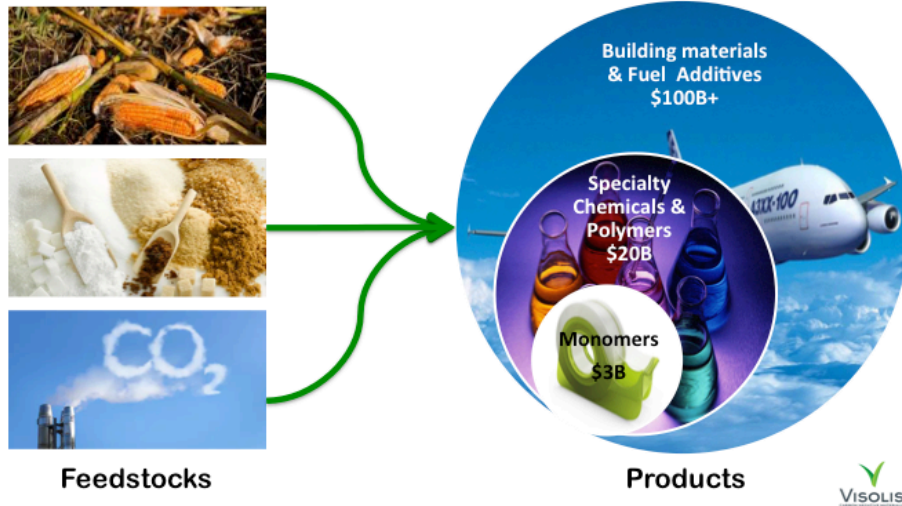
Build: [Genetic Transformation and Tool Development](#)

Description:

The rapid advances in microbiology in recent decades have led to the isolation of many microbes with favorable traits for industrial processes, but their utilization for production of sustainable chemicals and renewable fuels have been severely hampered by the lack of available tools for genetic engineering and synthetic biology. Industrial processes are, therefore, currently limited to a few well-characterized hosts such as E. coli and yeasts.

Visolis has pioneered a renewable process to produce high value monomers based on using fermentation to produce a hydroxyacid intermediate that can be subsequently upgraded to various valuable compounds using chemical processes. The process has been scaled up to demo scale in collaboration with NREL and commercialization is planned for next year. Production of our platform intermediate, however, will greatly benefit from using a host organism that is both acid-tolerant (which would reduce the need for base for pH balance) and capable of utilizing cheaper feedstocks such as waste gas.

To solve these challenges, Visolis has engaged the resources of the ABF consortium to develop new chassis for the production of this industrially important compound in an acid-tolerant microbe and an anaerobic microbe that can fix CO₂. Successful completion of the project will develop new host(s) for the production of our platform hydroxyacid that can be directly plugged into Visolis' production pipeline to produce renewable chemicals for the polymer and plastics industry.



Contact(s): Carrie Eckert (NREL), Brian Lee (Visolis)

Performance period: 3/1/18-3/1/20

Resulting publication(s)/patent(s): None to date.