Electro-Fermentation

Disclosure Number

201403323

Technology Summary

Current pathways to generate biofuels either ferment sugars derived from biomass or convert them to a partially-oxygenated intermediate to be reduced to higher density fuels. The energy density and yield of a biofuel product is limited by the oxygen content of the feedstock, the metabolic capability of the organism and the stoichiometric yield of the sugar to biofuel conversion reaction. Conversion of biomass to biofuels is limited by yield of biofuel. This invention allows improvement of biofuel yield by 350% (based on stoichiometry) using renewable electricity to increase the energy yield. Practical improvement in yield based on energetics, titer and rate can be expected to be between 100-300%.

Inventor

BOROLE, ABHIJEET P
Biosciences Division

Licensing Contact

SPECK, ROBERTA R

UT-Battelle, LLC

Oak Ridge National Laboratory

Rm 141, Bldg 4500N6253

1 Bethel Valley Road

Oak Ridge, TN 37831

Office Phone: (865) 576-4680

E-Mail: SPECKRR@ORNL.GOV

Note: The technology described above is an early stage opportunity. Licensing rights to this intellectual property may be limited or unavailable. Patent applications directed towards this invention may not have been filed with any patent office.