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South Dakota School of
Mines and Technology

LICENSING OPPORTUNITIES

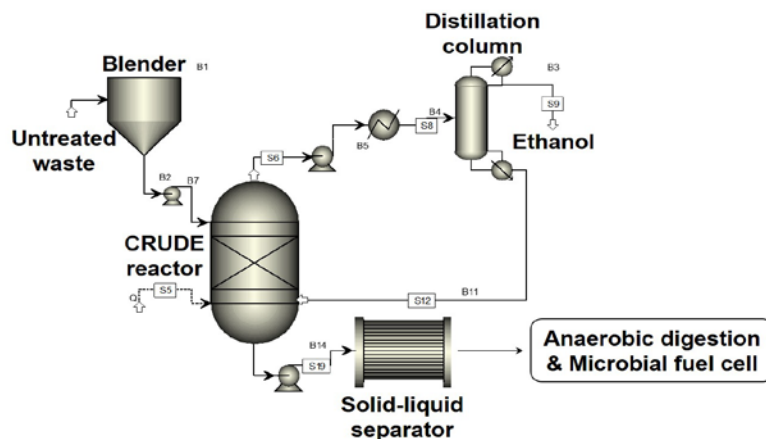
South Dakota School of Mines Office of Economic Development is actively seeking exclusive and/or nonexclusive licensing opportunities. Joint development opportunities are also available.

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Overview

Management and complete disposal of food waste is an ever increasing concern in current scenario. Available chemical and biological technologies have several shortcomings. Development of an ecofriendly technique which can be operated at low capital investment and produce bioenergy would be a real solution for the food waste disposal.



Description

In CRUDE process, requirements of chemical and energy intensive pretreatment steps have completely been eliminated. Elimination of harsh pretreatment step abolishes any possibility of synthesis of hazardous effluent and also cut down the requirement of water and energy compared to other available technologies. CRUDE process is based on a single pot CHAMBER (Controlled Hydrolysis and Microbe Based Energy Regeneration) reaction mechanism in which thermophilic anaerobic bacteria have been deployed for simultaneous pretreatment, hydrolysis, and fermentation of the food waste into biofuels. Single pot operational capability of CRUDE process makes its handling easier and requires less space and low manpower.

Impact and Benefits

- Consumption of municipal waste as substrate will be helpful in management of solid wastes across the globe
- Complete utilization of waste residual in other biological reactions (*viz.* thermophilic anaerobic digestion, microbial fuel cell) fulfills the minimum organic waste emission concepts
- Complete elimination of pretreatment step and no requirement of addition of expensive enzymes are major breakthrough over existing technologies in waste to bioenergy
- CRUDE process is free from release of any toxic effluent or greenhouse gas thus can be termed as real green technology having no environmental concerns