

2nd Euro Global Summit and Expo on

BIOMASS AND BIOENERGY

October 12-13, 2017 London, UK

Integration approach of anaerobic digestion and fermentation process towards producing bio-gas and bio-ethanol with zero waste: Technical

Raid Mohammed A Alrefai, KY Benyounis and J Stokes
Dublin City university, Republic of Ireland

The rapid increase in the world population has caused an enormous increase in the demand of energy. Growing demand has resulted in a shortfall in conventional energy resources. Due to that and because of the major negative impacts of fossil fuel on the environment and other aspects as well, the necessity toward finding alternative cheap, renewable, and environmentally friendly energy resources has significantly arose. Biomass as an energy resource has a potential to be a good alternative for non-renewable energy resources. Anaerobic digestion process is one of the most commonly biological conversion process used in converting biomass into biofuels. It has been extensively applied in many studies for converting several types of feedstocks and has proved it's significant effectiveness. (AD) digestates are generally composed of solid and liquid streams. Those streams are rich in nutrients and contain undigested materials which have not been digested in the digestion process. Despite the significant effectiveness, it would contribute in major issues if it has been applied at large scale, as the amount of digestates which would be generated are quite high. Due to that and to take an advantage of the digestates in the production of biofuel and bioproducts as well, the interests in enhancing and utilizing anaerobic digestion residues have recently much increased. Bioethanol is one of the most promising liquid biofuel. It is eco-friendly alternative to fossil fuels. In recent years, number of studies have investigated the integration approach of producing biogas and bioproduct in which would result in zero waste. However, this paper discusses mainly an integration approach for producing two promising renewable energies can be utilized in many applications with no waste generated. This approach is still at an early stage and require further studies to improve the properties of the biofuels and high-value bio-based products produced.

Biography

Raid Mohammed A. Alrefai is an PhD researcher in Dublin city university DCU. My research interest is to investigate the integration approach of anaerobic digestion with another biomass conversion process in order to solve the environmental and economical issues associated with anaerobic digestion when it is applied at large scale. The integration approach has recently taken its shape but more investigations on it are still required.

alrefai.raid2@mail.dcu.ie

Notes: