

Gasification of oil palm biomass to produce clean producer gas for heat, power generation

August 8 2014



Elaeis guineensis oil palm fruit Credit: Wikimedia

The process of burning fossil fuels such as petroleum, coal and natural gas releases huge amounts of carbon dioxide into the atmosphere. The effect of this carbon dioxide emission into our atmosphere is causes global warming. It is crucial to develop alternative renewable fuel sources which are sustainable, cost effective and environmental friendly.

These elements would increase fuel sustainability, security and reduce the adverse effects related to fuel combustion. Biomass based fuels is gaining popularity as an alternative to fossil fuels.

A research team led by Professor Mohamad Asadullah has embarked on a project related to gasification of biomass to produce clean producer gas. This gas mixture can be used as a fuel for internal combustion engines, turbine and fuel cell for power generation.

Currently available gasification technologies and processes produce gas with unusually high concentration of impurities such as tar, dust and acidic gases which render it difficult to be used widely.

The novelty of this technology is that, it can simultaneously remove all these impurities and can produce clean gas for heat and power generation. The technology developed in this project utilizes waste biomass as a feedstock, especially oil palm biomass, and produces value added products such as fuels and chemicals.

There is a huge commercial potential for this technology to be utilised in Malaysia and other countries that produce large amounts of biomass especially oil palm biomass which is suitable to be used in renewable energy production.

This project creates the opportunity and technology to produce high quality gas from waste biomass.

Provided by Universiti Teknologi MARA (UiTM)

Citation: Gasification of oil palm biomass to produce clean producer gas for heat, power generation (2014, August 8) retrieved 9 April 2024 from <https://phys.org/news/2014-08-gasification-oil-palm-biomass-gas.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.