BIOGAS DIGESTER ABSTRACT

Abstract
This research examines the generation of biogas from food waste through anaerobic digestion, focusing on its potential to provide affordable electricity in low-income areas. Aiming to make biogas production cost-effective and accessible, the study employs a straightforward, multi-stage process designed and tested using simple equipment. The resulting biogas, consisting of 72% methane and 28% carbon dioxide, was harnessed to power a biogas generator, demonstrating a feasible and economical method for electricity production.

To illustrate the practical application of this approach, the study tested it in a small-scale setup supplying power to 100 sewing machines reliant on electricity. This implementation underscores the viability of biogas as a sustainable and affordable energy alternative in settings with limited financial resources. Overall, the findings hold significant implications for accessible and eco-friendly energy solutions, especially for small enterprises in need of greener, cost-effective power sources.