



WASTE TO ENERGY CONVERSION



science & innovation
Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA



The Process Energy and Environmental Technology Station (PEETS) at the University of Johannesburg works closely with industrial and economic partners as well as with other, municipal, academic, and non-academic research institutions. To meet the present waste management challenges and that of the future, PEETS offers well equipped research laboratory and manpower for joint research activities.

We are a team of experts and a laboratory with different test systems to conduct investigation of physicochemical characterisation and biochemical analyses under anaerobic conditions. Our present focused waste streams for waste characterisation and biochemical analysis are putrescible waste and lignocellulosic biomass. As we develop our laboratory capacity, other fractions of municipal solid waste will be considered.

UJ's Process, Energy and Environmental Technology Station (UJ PEETS) was established in 2010 under the support of the University of Johannesburg. UJ PEETS is funded by the Technology Innovation Agency (TIA), an agency of the Department of Science and Innovation (DSI). Our mission is to provide technical oriented enterprise development support in the water, energy and environmental sector through appropriate technological innovation to grow South Africa's socio-economy in a sustainable manner.

UJ PEETS has strong institutional, regional and international collaboration. Within the waste to energy unit of UJ PEETS, the vision is to maximise the derivable value from all forms of municipal solid waste categories and agro-industrial waste streams.

We offer the following services:

RESEARCH AND FIELD WORK

- Development and operation of biotesting systems under anaerobic conditions
- Process optimisation of biomethane technology
- Process design of small-scale anaerobic digestion facility
- Waste quantification and biogenic potential analyses
- Feasibility and techno-economic analyses
- Training and technology transfer
- Concept refinement and prototyping

WASTE CHARACTERISATION

- Proximate Analysis (Total solid, volatile solid, fixed carbon and ash)
- Ultimate analysis (CHNS)
- Calorific Value
- Thermogravimetric Analysis

BIOCHEMICAL METHANE POTENTIAL

- Anaerobic batch test systems (e.g AMPTS II, Euidiometer)
- Semi-Continuous anaerobic bioreactor test systems with process control
- Pilot plant system for long term analysis
- Standard and advanced analyses and characterisation of substrates, inputs and downstream products (Digestate and biogas) in the laboratory by mobile biogas analyser, FOS/TAC, and GCs.

We also offer other services within the value extraction process from mostly biogenic waste leveraging on the network of laboratories and experts within the University of Johannesburg. Give us a call we will go an extra mile to exceed your expectation positively.

CONTACT US

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NOTE

- Pricing depends on exchange rate.
- Quotation provided on request.



Waste quantification exercise



Biochemical methane potential