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Deployable Toilet System: Toilets for a non-sewer system

Summary

VishwaKarma University, Pune has developed a deployable toilet system. The system offers pathogen and odour free discharge by thermophilic operation of the septic tank, with less water consumption. The modular toilets are easy to assemble on-site. Recycled e-waste is used for component manufacture. The toilet system configuration is designed as a single toilet for a family. The system is accessible, affordable and adaptable to local needs, particularly for female users who need to have dedicated toilet facility at their dwelling unit (despite the area constraints therein).

Background

- Lack of access to safe sanitation and open defecation.
- Inappropriate waste water disposal methods
- There is a need to develop a sanitation safe, pathogen and odour free deployable toilet system, with less water consumption with easy access and affordability.

Technology description

Key features of deployable toilet system

- On-site installation and ready to use modules with 3 components: septic tank, a component housing unit and solar / PV panel.
- Filtration unit for recycling of waste water to flush tank: the system has electronic system intervention and components are available off-the shelf in the market, hence cost effective.
- Biogas combustion integrated with heat exchanger
- Toilet Pot manufactured from Electronic Waste (e-waste) material using injection moulding process.



Market potential

Portable Toilets Market is projected to reach a market value of US\$ 9,851.4 million by the end of 2025. The portable toilets industry has foreseen a growth due to rising awareness regarding proper sanitation practices among consumers coupled with fast adoption of mobile toilets especially at outdoor events.

(<https://www.adroitmarketresearch.com/industry-reports/portable-toilets-market>)

Value Proposition

- Modular, separable and easy to assemble Toilet system
- Filtration unit for recycling of waste water to flush tank
- Toilet Pot developed from Electronic Waste (e-waste) material
- Cost effective

Applications

- Movable hygienic toilets for outdoor events
- Easy to assemble and install in villages

Technology status

- The technology is available for licensing
- Proof of concept achieved

Patent Status

Patent application pending

