

7th International Conference and Exhibition on
BIOPOLYMERS AND BIOPLASTICS
October 19-20, 2017 San Francisco, USA

Solution to stop the contamination of soil caused by necroslurry polymer

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The most well-known destinations for lifeless bodies, used and defended by beliefs, religions and people, are graves and burial chambers. They are the forms of burial, which, in the majority, bring comfort to the families and people close to the deceased, for idealizing that they are religiously and socially intact to beloved beings. However, a large part of the population is unaware or not informed about the environmental problems that such burials bring to public health and the environment. After the burial, the body begins to go through physical, chemical and microbial processes. Necroslurry is a liquid resulting from the decomposition of corpses, which has a sound capacity to percolate soils and groundwater and therefore, contaminate both, soil and groundwater near the cemeteries, due to the presence of pathogenic microorganisms in its composition. The vulnerability of soils and aquifers, which can be classified as low, medium or high depending on where the burial occurred, medium or high permeability of the cemetery soil and the position either above or below ground level are some of the factors that influence the way necroslurry may reach soils and groundwater. These impacts can cause disease and epidemics, as many cities use such groundwater as their water source and the soil is used produce food crop. Necroslurry is a greyish and brownish solution, mainly composed of cadaverine, an amine (C₅H₁₄N₂) with a repulsive and nauseating odor, a putrefaction by-product, besides being formed by water, minerals and organic degradable substances, the medium density is equal to 1.23g / cm³, pH between 5 and 9, at 23 to 28°C, in its liquid state is more viscous than water, due to its polymerization and the chemical reactions that produce the polymers. Due to the fact that it is a polymerizable substance, the transportation of necroslurry in its liquid phase is aggravated. The ideal is to use a system that transforms the liquid necroslurry into gas, using burial and constructive methods proper for this phase, facilitating the transportation as well as preventing the contamination to the environment. This article will show how these polymers hamper processes of attempted contamination prevention. It will also show what happens to the polymers resulting from the chemical processes of decomposition of the human body, when they reach the soil and the water tables. Currently, in Brazil, there are already technologies that meet these needs, monitoring the treatment of gases by molecular dissociation. The use of modular structures made of carbon steel and materials, which are put to the performance of a leak test, ensuring that the passage of gases and liquids are prevented, thus creating a great capacity for sealing, has already been used in some cities Brazilians. This method is very effective and of low environmental impact, eliminating the difficulties of the necrochorume treatment and fully complying with CONAMA Resolution 335/2003.

Biography

Juliana da Silva e Mascarenhas Guedes holds a degree in Civil Engineering from Universidade Federal de Minas Gerais, a Master's Degree in Structural Engineering from Universidade Federal de Minas Gerais, a PhD in Earth Sciences from Universidade Fernando Pessoa, in Porto, Portugal. Currently, is a professor of Civil Engineering at Universidade FUMEC and post-graduate in Structural Engineering from Universidade FUMEC. She is an investigator at FP-ENAS, UFP Energy, Environment and Health Research Unit, Porto. Has experience in the structural and sanitary area. Articles in papers in sanitation, environmental and structural área.

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