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Polymers and steam cellsJuliana S M Guedes¹, Maria Alzira P. Dinis¹, Camila A. F. M. Souza² and Ariádina S. Menezes²¹ University Fernando Pessoa, Portugal² FUMEC University, Brazil

The question of burials is considered sacred by different cultures, beliefs and religions. Cremation is an option less aggressive to the environment when compared to the conventional procedure, as it does not yield conventional residues and pathogenic microorganisms. However, this practice has been questioned and even condemned by some religions. Yet, the conventional burial system causes the contamination of the soil by the necroslurry; a viscous and polluting liquid, composed mainly of cadaverine; an amine (C₅H₁₄N₂) of repulsive odor. Its viscosity is due to internal chemical reactions, which produce polymers, which makes it difficult to be transported and removed from soil and groundwater. Again, cremation seems to be a feasible solution for the problem. Nevertheless, this procedure causes the loss of genetic cells. It hinders, for example, the definition of paternity and/or the treatment of diseases through the removal of stem cells from cadavers that, according to recent research, can be reactivated and transformed into any kind of cells or tissues of the body in good condition. A new technology for the vertical burial system which is currently being developed in Brazil, allows the gas exchange and controls humidity, pressure and temperature inside shrouds, causing an aerobic decomposition that eliminates environmental contaminations, reducing environmental impacts, diseases and odors. The sealed system demands the application of fiberglass plates and polymers, which are resistant, elastic, and suitable to absorb the coefficient of expansion of the system, preventing any leakage due to retraction. This method also allows the storage of genetic cells, proving to be a good solution for health problems as well as environmental, religious and cultural issues framing this matter.

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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