



Cellruptor pre-treatment of feedstocks to enhance biogas production from anaerobic digestion

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Related website	

The objective of this project was to conduct a series of experiments to understand the behaviour of pathogen reduction and biogas generation, under different conditions of residence times and pressures, in a novel anaerobic digestion sludge pre-treatment technology.

Cellruptor is a simple low cost low energy use pre-treatment technology which is intended to disintegrate microbial biomass feedstocks prior to the anaerobic digestion process. By disintegrating the cell structures and thus breaking down particle sizes of the biomass entering the digester, the microbes in the digester can work much more efficiently.

To date, anaerobic digestion is the most prevalent sewage sludge treatment process. Cellruptor has been designed as an additional process to be retrofitted to anaerobic digesters.

Collaborators

Eco-Solids International Ltd
Yorkshire Water Plc

Publications

Mushtaq M., Banks, C.J., Heaven, S. (2012). Effectiveness of Pressurised Carbon dioxide (P CO₂) for Inactivation of *E. coli* Isolated from Sewage Sludge (SS). *Water Science and Technology*, 65, (10), 1759-1764

Mushtaq M., Banks, C.J., Heaven, S. (2011). Evaluation of pressurised carbon dioxide pre-treatment aimed at improving the sanitisation and anaerobic digestibility of co-settled sewage sludge. *Proc. 16th European Biosolids and Organic Resources Conf.*, November 2011, Horan, N.J.(ed), Aqua Enviro, Leeds, UK