

Environmental Factors Affecting the Biomethanization Process – Agnieszka Montusiewicz

Summary

The paper describes the most important factors controlling the process of methanogenesis in the biomethanization technology. It discusses the operational regimes of temperature as well as pH, C/N ratio, the necessity for micronutrients and sensitivity to a number of toxic compounds. Components with an inhibitory effect are characterized as biostatic compounds (ammonia, VFAs, hydrogen sulfide and salinity-inducing substances) and biocidal substances (such as surfactants and pharmaceuticals). The threshold limits of the compounds in question securing the system against disturbances are introduced, as well as the measures counteracting inhibition. Some ways of overcoming the negative impact of environmental factors on the system are presented, including co-fermentation, supplementation of nutrients, removal of ammonia and hydrogen sulfide by different methods and acclimatization of methanogens to inhibitory substances.