生物能气动搅拌沼气发酵装置与技术研究

Fermentative equipment and technology of marsh gas with bioenergy pneumatic-agitation

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英文关键词：marsh gas; bioenergy; pneumat-agitation; fermentative device; fermentative technique

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中文摘要：

根据厌氧发酵动力学原理，研究发明了新型专利生物能气动搅拌沼气发酵装置。该装置将沼气气动搅拌、自动循环、自动破壳、厌氧微生物膜、强制回流与清渣、两步发酵与太阳能自动增温、消除发酵盲区和料液“短路”等新技术优化组装配套，采用动态连续发酵工艺，解决了静态不连续发酵沼气发酵装置存在的技术问题。经在西北黄土高原地区实际检验证明：年均产气量提高31%～72.4%，全年产气使用管理简便；与农业主导产业相结合，取得“四省、三增、两减少、一净化”的综合效益，为以沼气为纽带的能源生态模式的发展提供了可靠的技术支撑。

英文摘要：

Based on the kinetics principle of anaerobic fermentation, the new patent—the fermentative equipment of marsh gas with bioenergy pneumat-agitation was invented. This equipment assembled the new techniques of pneumat-agitation, automatic backflow and fixed of bacterium, automatic breaking shell and clearing residue, two-step ferment and automatic heating with solar energy, eliminating blind spot of ferment and short circuit of material liquid, and made optimization and matching. Using successive ferment technology of dynamic state, it solved the technical problems existing in the fermentative equipment of marsh gas with unsuccessive ferment technology of static state. The actual tests in the loess plateau area of northwest show: the year average production of marsh gas increased by 31% to 72.4%, and it can produce marsh gas all the year for using with easy management; Combining with the leading industry of agriculture, it obtained the synthetical benefit of four-saving, i,e, saving coal, electric power, labor forces and investment, three-increasing, namely, increasing fertilizer, efficiency and yield, two-reducing: reducing pests and disease, and soil and water erosion and one-purification: cleaning the environment, and provided a reliable technical support for the development of energy-environment model with marsh gas as link.

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