

METHOD FOR PRODUCTION OF BIODEGRADABLE BIOPLASTICS

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The invention refers to a system for the selective transfer of volatile fatty acids (VFA) from an anaerobic fermenter into a polyhydroxyalkanoates (PHA) production system based on microbial mixed cultures (MMC). This system is able to produce a stable production of PHA containing bacteria.

Protection: Italy (opportunity for seeking patent protection internationally)

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INVENTION

To date, many systems for extracting VFA from aqueous solutions (e.g. anionic exchange resins) are known. Obtaining these VFAs in a usable form is more difficult and normally uses a lot of thermal energy or additional chemical reagents (e.g. NaOH). The pertraction system involves extracting the VFA with a mixture of biodiesel or vegetable oil containing additives and subsequently releasing them into a slightly basic aqueous solution. This aqueous solution is used to obtain PHA within a mixed microbial culture system (MMC) which regenerates at the same time. The system is therefore a closed system, which takes VFA from an anaerobic system and produces a biomass enriched in PHA.

ADVANTAGES

- Safe chemical system;
- Lower capital cost due to the reduced need for security and containment systems;
- Reduced operating costs due to the constant reuse of the recirculating solution;
- Increased process speed.

APPLICATIONS

- Production of bioplastics;
- Biogas production systems;
- Treatment of agricultural and agro-industrial waste and residues;
- Treatment of wastewater.

CONTACTS

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