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Fungus enzyme enable complete PET recycling

Source:

[Austrian Center of Industrial Biotechnologie](#)

Language

English

Section:

Company: ACIB GmbH – Austrian Centre of Industrial Biotechnology

Location: Graz, Austria

Description:

Until now, the only possibility was to use plastic bottles (so-called PET bottles) to burn them or to crumble into "inferior" plastic. In 2011, the Austrian Center for Industrial Biotechnology (ACIB) presented a new "natural" process to recycle plastics. & Nbsp; This makes it possible to completely decompose plastics into their individual components by means of fungi. Thanks to Austrian know-how, 100% of the starting materials can now be re-used in an innovative recycling process.

In the developed process, the synthetic polymers are decomposed into their monomeric constituents by means of enzymatic methods under gentle conditions. Through the use of special mushrooms, a natural tool has been found that can decompose an artificially created substance. From the monomers obtained, high-quality plastics can be produced in further production steps. Recycled plastics are thus restored to their full value, similar to glass or paper recycling. As a result, the full range of the PET application possibilities (eg: bottles, packaging, sportswear, synthetic building blocks, etc.) can be reused.

Durch diesen neuen vollwertigen Recycling-Kreislauf werden Abfälle vermieden, da sie ohne Anfallen von Nebenprodukte wieder vollständig in Werkstoffe umgewandelt werden. Somit müssen weniger Produktionsrohstoffe aus Erdöl neu erzeugt werden.

The Austrian K2 Center ACIB has been researching the recycling of polyester for a decade. The competence center is formed by a grouping of seven universities and 25 project partners. An interdisciplinary research team, consisting of professors from the Vienna University of Technology, the University of Natural Resources and Applied Life Sciences, Vienna, and Graz University of Technology, participated in the development of the new process presented here. Since the implementation, and thus the cooperation with the industrial partners in recycling practice, is just as important as the innovation of future-oriented ideas, there are already first cooperations with disposal companies in Styria and Vienna.

Further information [LINK](#).

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