Polymark

The Novel Identification Technology to differentiate High Value Plastics in Waste Streams

www.polymark.org

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About Polymark

Polymark is a three-year research project funded by the European Commission which has developed a new technology that enables the identification and sorting of polymers, including PET, in the high-value plastics waste stream.

Background

PET is one of brand owners' packaging materials of choice due to its outstanding performance in safely delivering products to consumers, its 100% recyclability and re-use capabilities.

Polymark aims to maximise the value from recycling and the re-use of this valuable resource, while meeting EU rules on the re-use of food contact and non-food contact PET. The technology that has been developed successfully distinguishes between food-contact plastics and non-food contact plastics in order to further optimise the high-value waste stream and ultimately increase a more valuable use of these materials.

Polymark Achievements

Development of the Chemical Marker

Within Polymark a chemical food-contact approved marker was identified. The marker is used for coating on a bottle or on a label. After identification and sorting, this coated marker can be subsequently removed by existing recycling plant washing.

Development of the Spectral Identification Technology

The Polymark detection principle for sorting is based on UV-excitation and VIS-fluorescence. The detection system has been designed and successfully implemented. It is capable of sorting food-grade PET bottles at 3 m/s belt speed with spatial resolution of 10 mm. This spectral marking technology could be also used for other applications (e.g. cleaning process, composition, etc.).

Development and Functionality of the Polymark Industrial Scale Sorting System

The marker detection setup is built from two basic units: a high energy UV light unit for excitation of the marker and a highly sensitive camera to detect the weak fluorescence signals emitted from the marker. This Polymark sorting machine is able to achieve an output purity of 98% on the major input fraction.

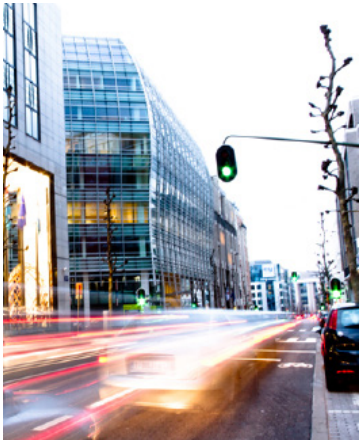
Contact

Project Coordinator:
Petcore Europe

Avenue de Cortenbergh 71
1000 Brussels, Belgium

+32 (0)2 739 63 89
info@petcore-europe.org

Website: www.polymark.org



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