

# TRASH CASH

PRESS RELEASE:

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## Material Innovation: melt-mixing process to achieve high-grade PET pellets for injection moulding and non-woven textiles

- From mixed polyester textile waste
- Into new higher-grade PET plastic injection-moulding pellets and non-woven composites for the automotive sector
- Incorporating aesthetic finishes and photographic print design for decorative features in car interiors



Contemporary recycling methods often produce low value products, particularly with plastic products. To address this and explore high value applications for recycled plastics, a 'melt mixing' process to obtain mix-PET pellets (useful for injection moulding) has been explored.

Using a melt mixing process textile waste, once sorted is turned into a polymer blend with better technical properties than can be obtained using conventional PET recycling methods. The process results in PET pellets suitable for injection moulding to produce products for the automotive sector with impact resistant properties and aesthetical qualities.

Faced with new regulations the automotive sector is under pressure to use more recycled and environmentally-friendly materials. In Trash-2-Cash the melt-mix PET material has been used to create decorative parts for car interiors such as door inserts and the central console. Laser-etching has been used on the surface to create bespoke patterns for a decorative feature.

Further development work by IVF has resulted in the production of a nonwoven material which is currently being explored as part of a new decorative composite which incorporates



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creative print design to produce a bespoke photographic decorative feature within the car interior. The printed non-woven textile is captured within a recyclable epoxy resin developed by CIDETEC, Spain.

Come to our showcase at **Klokgebouw** during Dutch Design Week 2018 and decide for yourselves whether this material offers a solution to virgin plastics and low-grade recycled plastic components.

For more information about Trash 2 Cash go to [www.trash2cashproject.eu](http://www.trash2cashproject.eu)

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NOTES TO THE EDITORS:

## **18 partners in 10 countries turning textile waste into new high-value products**

Trash-2-Cash is an EU funded textile research based project centred around fibre-regeneration in the circular economy. Taking waste and making new fibres is the project mantra. 18 partners across 10 European countries in the fields of science, design and manufacturing collaborate together.

Cotton and polyester, mainly in blends, make up 80 percent of fibres used globally. Both industries present **serious** environmental problems, many of which are in developing countries. With global textile waste doubling annually in volume in many areas of the developed world, the T2C consortium believe fibre regeneration in tandem with recycling can help to address most of these issues.

### **The Vision:**

The Trash-2-Cash project aims to progress us towards the sustainable textile industry of the future, one that benefits both people and the planet. Growing problems with paper fibre waste from the paper industry and textile fibre waste, originating from continuously increasing textile consumption, is being challenged through design-driven innovation.

***“All the clothes that we throw out and fibres wasted in production are actually a valuable resource that we can’t afford to discard. This project gives us the opportunity to challenge that.”***

*Emma Östmark, RISE Research Institutes of Sweden*

Every year we throw away over 3 million tonnes of textiles in the EU28 countries. In this unique collaboration between designers, scientists and manufacturers, the EU-funded Trash-2-Cash project tackles the growing problem of textile waste by thinking through design and developing state-of-the-art fibre recycling methods, to create profitable new high-performance fibres.



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## **Collaboration is Key:**

Designers, design researchers, scientists, raw-material suppliers and end-product manufacturers from across Europe make up this cross-disciplinary and cross-sectorial consortium. 18 partners, from 10 countries, are working on this Design-Driven Material Innovation (DDMI) project, where the whole supply chain is represented. Having all of these specialists on board means that new fibres can be spun and woven, knitted or formed into textiles and hard materials, which can then be made into innovative new products.

## **User Needs First:**

The partners are working together to develop state-of-the-art textile recycling technologies to produce new fibres that are 'designed' for the kinds of products people want.

***“The new Trash-2-Cash fibres will not only be ‘made from waste’ but will be created to be used appropriately and fully before going into future recycling processes. We’re using less harmful processes for people and the environment, and we’re designing-in performance so that these fibres offer a full package for consumers and the environment.”***

*Prof. Rebecca Earley, University of the Arts London*

## **Made for Future Recycling:**

Together the collaborators are defining material properties and evaluating newly developed eco-efficient cotton fibre regeneration processes and polyester recycling techniques. Novel materials are being constructed in order to generate new textile fibres and other products that will be compatible with the environment for a sustainable future. Prototypes – for high quality fashion, interiors and automotive contexts – are currently being developed to be produced in a realistic test production environment.

## **New Models:**

The T2C team is not just aiming to create amazing new regenerated fibres, it is also pioneering 'Design-Driven Materials Innovation' a whole new approach to developing materials. In many ways the team see this as the legacy offer – a model for other creative designers to work in collaboration with science and industry to create sustainable change.

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## **Trash-2-Cash project statistics:**

Total budget: 8,928,994.75 €  
EU Contribution: 7,933,461.00 €  
Duration: 42 months  
Start date: 1 June 2015  
End date: November 2018  
18 partners from 10 countries



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9 work packages (WPs)

[www.trash2cashproject.eu](http://www.trash2cashproject.eu)



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