

# TRASH CASH

PRESS RELEASE:

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## Material Innovation: regenerated polyester obtained using a low-impact technology for use in high performance textiles

- From polyester and blended polyester-cotton textile waste
- Into new polyester fibres for high performance textiles
- Using a new catalyst for de-polymerisation allows impurities to be removed resulting in a higher-value polyester fibre



There is a great need to convert waste polyester textiles, which are not suitable for reuse, into new high-value textile fibres. The aim is to provide an alternative to virgin polyester, which has huge environmental impacts in its production.

Scientists from IVF Swerea in Sweden, have focused on the development of a catalyst that activates depolymerisation of polyester at a low temperature.

The polyester recycling approach uses a mild chemical method to depolymerize. This method is used on pure polyester as well as cotton/polyester blends. This allows dyes and finishes to be easily removed, which pollute the recycled material in a conventional process. The resulting polyester material is suitable for processing in the same way polyester production, resulting in high-value performance fibres, yarns and textiles.

In Trash-2-Cash this technology has resulted in a performance polyester for childrens rainwear, which when combined with a recyclable epoxy resin (developed by CIDETEC) has resulted in a fully recyclable raincoat designed by Finnish clothing company REIMA, without compromising performance. The technology is also intended to produce stretchy polyester to replace the use of Elastane in jeans, also in collaboration with REIMA. Through Trash-2-



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 646226

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Cash research elastane has been shown to be a major barrier to textile recycling as it can't be detected by near-Infra-red (NIR) sorting technologies and pollutes the recycling process.

Compared to polyester synthesized directly from crude oil, polyester made from a regeneration process consumes less energy and results in lower CO<sub>2</sub> emissions. Taking this process forward means the fashion industry's dependence on finite and unsustainable resources will decrease along with the raw material costs.

Come to our showcase at **Klokgebouw** during Dutch Design Week 2018 and decide for yourselves whether this material offers a solution to polyester textile recycling and virgin-polyester dependency in the textiles and fashion industries.

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

Ends

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*



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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.

## **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 €



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EU Contribution: 7,933,461.00 €

Duration: 42 months

Start date: 1 June 2015

End date: November 2018

18 partners from 10 countries

9 work packages (WPs)

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



FOR FURTHER INFORMATION AND HIGH-RESOLUTION IMAGES PLEASE CONTACT:

Name: Clare Lowther

T: +44 (0) 20 7 514 2978

E: [ccd@arts.ac.uk](mailto:ccd@arts.ac.uk)



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