

An innovative sustainable chemistry project has received continuity of support through research and development towards commercialisation.

A new adhesive for use in carpet tiles which has been developed at the University of York could help dramatically reduce their impact on the environment.

The powerful adhesives currently used to bind the layers of carpet tiles together make it challenging to recycle them. In Europe, around 70 million kilogrammes of carpet tile waste is incinerated or sent to landfill sites every year.

Researchers in the University of York's Green Chemistry Centre of Excellence have created a new starch-based alternative that allows the layers to be separated and recycled.

Testing has shown that the new adhesive is just as strong as established products, can withstand steam cleaning and is also highly flame retardant. A key characteristic of the product developed in York is that its adhesive quality can be switched on or off using a chemical treatment that is inexpensive and does not damage the tile materials.

The research, which is published in the Royal Society of Chemistry journal *Green Chemistry* (see right), was conducted in collaboration with the UK-based operation of global carpet tile manufacturer InterfaceFLOR.

“The results of our research provide a potential solution to a serious waste problem and also demonstrate in broader terms how end-of-life considerations can be incorporated into product design without sacrificing quality”

Professor James Clark, Green Chemistry Centre of Excellence, University of York

The project started as a Chemistry Innovation Green Chemistry CASE award (originating from Crystal Faraday) and led to a follow on development project supported by the Technology Strategy Board.

“With Technology Strategy Board funding, we have been able to keep this project going, thus bridging the gap between promising academic work and pilot scale industrialisation. We believe this new adhesive could play an important role in helping us to achieve our Mission Zero goal.”

Miriam Turner, Innovations

During the mid-1990s InterfaceFLOR changed its business model to consider and reduce the environmental impact of every creative and manufacturing decision made. Now defined as Mission Zero, the company's drive to eliminate its impact on the environment by 2020 plays a central role in the innovation of its products, services and processes.

Green Chemistry

Cutting-edge research for a greener sustainable future

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