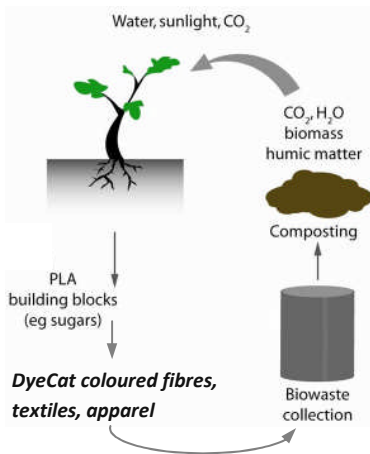


# The DyeCat PLA Story

With oil supplies running out, the need for alternative materials made from renewable sources has never been more important. Polyester – the material that makes up a significant amount of most peoples' wardrobe – is one of those materials that is currently derived from oil supplies. With its use in clothing (apparel) so prevalent, the time to switch to alternatives is *now* if we are serious about a sustainable future.

**DyeCat Ltd** has a vision – to improve the performance, environmental impact and sustainability of coloration technology through technical innovation. One of these technologies is an alternative to the oil-dependent polyesters – PLA or poly (lactic acid). PLA is a polyester derived from 100% renewable sources. The production of PLA uses 20-50% less fossil fuel resources than comparable petroleum-based fibres - PLA is a particularly 'green' polymer in terms of sustainability and degradation.



Plants process CO<sub>2</sub> from the atmosphere and water through photosynthesis to make the raw materials from which the building blocks of PLA can be obtained. When PLA has reached the end of its useful life, it can be composted, which converts the PLA back into CO<sub>2</sub>, water, and biomass with minimal environmental impact. The usual process for dyeing materials is to submit them to high-temperature, aqueous dyeing processes containing many different chemicals. This is very energy intensive, inefficient and uses a lot of water and produces a lot of coloured effluent.

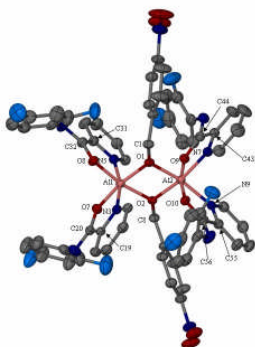
**The DyeCat approach** utilises a patented catalytic process that allows colour to be integrated directly into PLA, and eliminates the need for conventional dyeing processes.

**DyeCat's** approach means that the colour in the fibre is generated at the same time the polymer is made – this way, the colours produced are 'locked into' the fibre providing a technically superior colour that doesn't fade or wash-off like conventional dyed fibres. Also, because the colour is introduced at the same stage the fibre is made, there is no need for the wasteful coloration processes that usually occur.

Not only is DyeCat PLA fibre renewable and recyclable, it has the ability to perform better *and* saves chemicals and energy over traditional dyeing methods.



DyeCat has demonstrated the technology by producing coloured fibres and weaving them into a dress – this is currently on show at the London **Science Museum** so go along and take a look! A link to the exhibit can be found [here](http://antenna.sciencemuseum.org.uk/trashfashion/).



DyeCat technology has potential for use in textiles, clothing, automotive plastics, military and biomedical applications. DyeCat technology does not just introduce coloration to the polymer, but can also introduce other functionality such as UV resistance or fluorescence; it truly is a versatile technology.

**If you're interested in working with DyeCat in bringing this technology to market, or would like to know more, please visit our website: [www.dyecat.com](http://www.dyecat.com)**