Background to the support provided

Our initial meeting was at the University having been initially referred to each other by the Black Country Chamber of Commerce.

The company were interested in developing a manufacturing capability for biodegradable glitter and need some technical input on dust extraction as the material has a tendency to create ‘glitter dust’ which needs to be separated & contained at source to eliminate environmental contamination & in-process cross-contamination from waste process dust. They also required assistance to develop a more efficiently degradable glitter base material. EnTRESS agreed to carry out initial research on the feasibility of alternative bio-degradable materials for the manufacture of glitter. In addition an outline concept plan was prepared, which dealt with the issue of dust extraction during glitter manufacture.
What was accomplished?

The knowledge transfer process

Starting point for the project was a researched review of the current range bio-degradable materials available and their applications. With an assessment of their suitability for the manufacture of glitter. The published bio-degradability of suitable materials was also assessed against the aims & criteria set by Prima Makeup as part of their strategic business model.

As an aid to material selection characterization of the glitter using electron microscopy was carried out by our academic researchers, Dr Iza Radecka & Professor Marek Kowalczuk.

A review of the glitter manufacturing process was also undertaken in order to assess the source, nature and level of dust produced. In order to select appropriate extraction solutions. The suggested machine enclosure concept is shown right.

In the current environmental climate, the bio-degradability of products is being questioned, with the added issue of in-organic particles, finding their way into the sea and ultimately the food chain. EnTRESS and its academic research team carried out a review of Prima Makeup’s current products with a view to improving business performance in terms of resilience, profitability and competitiveness within the cosmetics industry while at the same time contributing to the protection and preservation of the environment.

The identification of suitable bio-degradability testing standards was a key factor in this projects success, as a means of maintaining and reinforcing the high quality environmental credentials that are at the heart of Prima Makeup’s business ethos.

What’s Available

- Fully funded one to one mentoring and business support for the development and/or adoption of environmental technologies, processes and improvements.
- Access to, and collaboration with, leading research provided through the University of Wolverhampton.
- Fully funded in-house resource efficiency audits for Black Country SMEs.
- Technical Review Workshops providing assessments on current products, and associated R&D opportunities.
- Environmental Impact Challenges set by large commercial and public organisations providing SMEs with business opportunities.
- Technology Showcases promoting the uptake of environmental innovations developed by SMEs.
Solutions Identified

- Our research suggested that the composition of the glitter’s base material could be modified to increase significantly the compostability of the product.

- Three dust extraction solutions were identified ranging from full factory wide distribution systems to low cost individual machine based systems. In addition to the dust extraction, it was also recommended that the machinery be fully enclosed to contain manufacturing dust and have the added benefit of sound proofing the equipment.

- That consideration is given to the gaining of the EN 13432 Certification for the company’s current products. It should be noted that there are also ASTM equivalents are also available.

- Gaining this standard would bring a positive re-enforcement to the company’s and the product’s environmental credentials.

- The EnTRESS project has also explored the practicality of replacing the current packaging with bio-degradable containers. To this end we are currently rapid prototyping custom designed sample containers in compostable bio-plastic. The CAD model of which is shown left.

EN 13432

The EN 13432 industrial standard is arguably the most international in scope. This is the standard that must be met in order to claim that a plastic product is compostable in the European marketplace. The standard requires biodegradation of 90% of the materials in a lab within 90 days. As part of the on going link with the company, the University can assess products for the likely hood of complying with this standard.

Rapid Prototyping

EnTRESS can provide access to the latest rapid prototyping equipment which can save significant amounts of time & resource when developing new products. However, in line with the ethos of the project we are exploring the manufacture of prototypes using compostable bioplastics as well as the issues around recycling of prototyping waste.

Technology Solutions Increase Competitiveness

Dr Iza Radecka &
Professor Marek Kowalczuk

The EnTRESS project collaborates with the University’s leading academics in tackling the global plastics problem, through the development of Bioplastics. With traditional manufactured plastic waste accumulating at rates in excess of 25 million tons per year, innovative solutions need to be found. Bioplastics are biodegradable, but also have practical applications in the medical, agriculture, packaging and manufacturing industries.
What is EnTRESS?

ENTRESS is a new environmental innovation project drawing on University of Wolverhampton expertise, part funded by the European Regional Development Fund (ERDF).

What we do?

Support for Black Country SME’s who want to modify their practices for increased sustainability.

Eligibility Criteria:

Open to all Black Country (Sandwell, Dudley, Walsall & Wolverhampton) Small to Medium Size Enterprises (SMEs).

EnTRESS Case Study

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Susan Swansborough (Left) from the EnTRESS Project is seen here with Jayne Shields (Right) from the Black Country Chamber of Commerce, handing over of the final technical report to Prima Makeup’s CEO Emma Southorn.