

The Business

Hymid Multi-Shot Ltd is a well-established manufacturer of injection moulded articles, specialising in twin shot applications. The company offers a wide range of materials and services to give its customers increased performance and reliability. Markets include medical, instrumentation and electronic industries.

The company has worked with the University of Exeter across a number of projects and has engaged with three of its business technology centres.

Centre for Additive Layer
Manufacturing

The First Challenge – Prototyping: Centre for Additive Layer Manufacturing (CALM)

Hymid was approached by a product developer, who wanted a prototype of a new design in order to prove the concept before committing to high cost tooling. At the time, there was a growing interest in the innovative manufacturing technique of 3D printing.

So, to find out more about Additive Layer Manufacturing's potential for design and prototyping, two Hymid staff enrolled on an educational knowledge exchange workshop run by CALM for small to medium enterprises interested in the technology. Attendees had the opportunity to tour the ALM facilities and discuss individual company requirements with CALM engineers.



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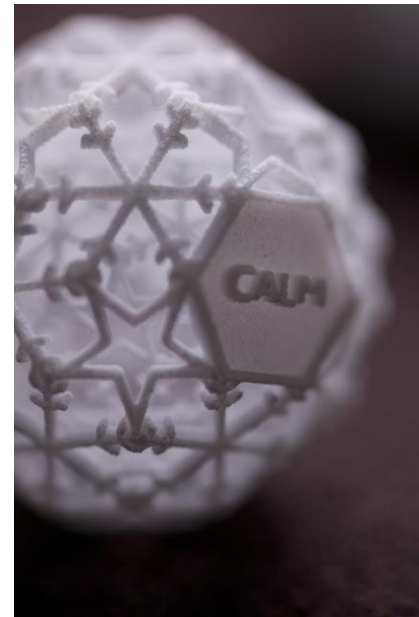
Centre for Additive Layer
Manufacturing

Centre for Alternative Materials
and Remanufacturing Technologies



Following the workshop and using Computer Aided Design data supplied by Hymid, CALM then manufactured a Laser Sintered nylon prototype of the new product for Hymid to show the customer. This helped the company's client move the new product from the design and development to the manufacturing stages.

Hymid staff described the workshop as a “fantastic introduction to ALM, suitable for all levels of experience.”



A nylon part Laser Sintered by CALM. We cannot show the actual part, because the project is confidential.

The Second Challenge – Recycling Opportunities: Centre for Alternative Materials and Remanufacturing Technologies (CALMARE)

Hymid is continually looking for ways to achieve its goal of zero waste and the company was particularly concerned with how to recycle a ‘two shot’ injection moulded medical device, which uses a polymer blend with an over-mould of Thermoplastic Elastomer (TPE). During the moulding cycle, the TPE (second shot) is chemically bonded to the polymer blend (first shot) substrate, which makes it difficult to physically separate the two materials.

CALMARE was able to investigate three different techniques, which demonstrated that, with further development, the materials could be successfully separated and recovered for eventual reuse. It also determined the typical properties that could be achieved for manufacturing parts out of a blend of all the waste material, which could provide an alternative but cost effective solution. The findings give Hymid a large amount of scope for development, which it can include as part of its overall business strategy.

