

## The Invention

The technology developed involves a novel way of converting conventional foam to auxetic foam through the use of solvent instead of heat. The process which was developed can be divided into three steps; (1) Wetting foam with appropriate solvent, (2) Compressing the foam (3) Allowing the foam to dry well. The Poisson's ratio obtained by this process is similar to that obtained by the heat process, a rival technology. The process can also be reversed to convert auxetic foam into conventional foam.

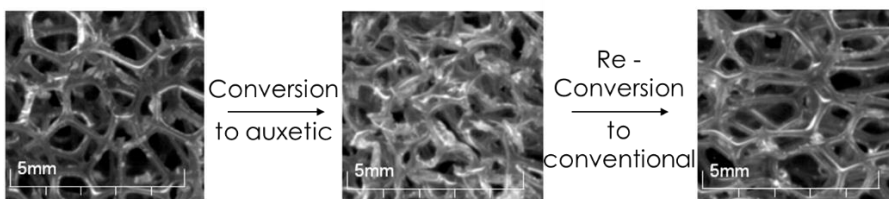
## NOVELTY

Current methods of converting conventional foams to auxetic foams focus around compressing, heating and cooling the foam. This method can be time consuming and costly when considering the heating equipment required. The proposed production process is more energy efficient than current methods since it does not require heating. This, coupled with the fact that solvents may be reused several times lowers the production costs and also allows for a more environmentally friendly process. The use of solvents also removes the risk of the foam being degraded as part of the heating process. As solvents flow homogenously, the process for converting large samples of auxetic foam blocks would be more efficient than current processes.

## APPLICATION FIELDS

This technology may be used to produce a number of products, for which enhanced capabilities will emerge as a result of the superior properties that auxetic foams have over conventional foam. This can be applied to:

- Safety equipment: protective clothing such as helmets, knee pads and similar items that make up kit for cyclists, motorcyclists and other leisure activities and extreme sports;
- Healthcare: novel mattresses which reduce the incidence of bed sores;
- Manufacturing processes which involve filtering: tuneable filters;
- Sound proofing: recording studios, theatres and the like.



*The development was executed at and supported by the University of Malta, sole owner of the rights. The university's IP is managed by its Knowledge Transfer Office. Inquiries shall be submitted to [knowledgetransfer@um.edu.mt](mailto:knowledgetransfer@um.edu.mt), or further information may be obtained on +356 2340 3466.*

## IP STATUS

Patent granted under number GB2480905 B in July 2013 (United Kingdom). Patent application number MT4236 submitted in Malta was also granted to the University of Malta.

## COMMERCIAL INTEREST

We are interested in collaborating with entities to design smart materials.

## LEAD INVENTOR



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