

Emergency immobiliser for accident victims

March 6 2013

The Centre for Applied Research Tecnia Research & Innovation has through its FIK initiative designed Varstiff, a smart textile material that can adopt different shapes; when vacuum is applied to it, it turns rigid once again and achieves hardness equivalent to that of a conventional plastic. The material reverts to its flexible state once the vacuum is released. The first product Varstiff will be used for will be an emergency immobiliser for accident victims. Thanks to the encouragement and collaboration of Janus Development, this product has been selected by the Botín Foundation as one of the three award-winning projects in the first edition of its programme "Mind the Gap". To support its launch onto the market a new technology-based enterprise will be set up to operate in the healthcare sector initially, but with plans to expand its activity to other sectors like the automotive or leisure sectors.

The new material designed by Tecnia can be adapted to any part of the body and in any situation; it can be fitted in its soft, malleable state so that afterwards when vacuum is applied to it, it becomes as stiff as plaster of Paris. This makes it possible in the event of an accident to immediately immobilise parts of the victim's body that are difficult to access without moving it, like the neck, back or thorax.

The funding of 350,000 euros over two years provided by the Botín Foundation through its "Mind the Gap" programme will enable the development of the first two products to be completed: an immobiliser for emergencies, and a position fixator to improve the life quality of people who have to use wheel chairs. The new enterprise is expected to be up and running by the end of 2013 and is expected to launch its first

product onto the market early in 2014. Its headquarters will be located in the Basque Country and it is estimated that it will achieve an accumulated turnover of 2 million euros during the first four years it is operating.

Other solutions

This revolutionary material also offers solutions in other spheres of healthcare, like orthopaedics, where it has advantages over ordinary solutions that use elastic straps that are closed using Velcro, or inflatable cushions. These solutions apply pressure and therefore exert force on the skin; and apart from lacking the necessary stiffness, they reduce comfort.

The automotive sector, leisure and sports are other fields in which this material can have new uses to ensure the safety and comfort of its users. In the automotive sector this material will contribute greater comfort and personalisation of different items, like seats that can be adjusted to each person, systems for absorbing energy in doors, or flexible luggage racks. In the sphere of sports, it could lead to flexible items for camping like chairs, tables, mats, etc. Likewise, this material could have a pioneering role in the development of high-performance protection textiles, like for example, clothing for extreme sports or for security personnel.

Provided by Elhuyar Fundazioa

Citation: Emergency immobiliser for accident victims (2013, March 6) retrieved 25 April 2024 from <https://phys.org/news/2013-03-emergency-immobiliser-accident-victims.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.