

SUNfeet technology for the customization of comfort insoles using a smartphone

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SUNfeet technology

The Instituto de Biomecánica (Biomechanics Institute-IBV) has developed SUNfeet, insoles that are customized to the anatomy of the user's foot, which increase the comfort of footwear and reduce pain and

fatigue in the feet. This product is now available in Europe.

These insoles display an innovative technology used in their development: A combination of a system for capturing and digitizing the shape of the foot that via smartphone, and a 3-D printing system that allows insoles to be manufactured in a totally personalized manner.

SUNfeet arose from the idea of combining the latest trends in health, technology and fashion to develop exclusive insoles which make footwear more comfortable and care for the feet, thus promoting an active lifestyle.

The SUNfeet smartphone app was designed for the 3Dcapture system, making it possible to obtain the shape of the foot extremely accurately and conveniently from any location.

The process is very simple: while seated, the user places the bare foot on one side of a sheet of paper. The app itself will guide him/her until three images of each foot are obtained. The files are then sent to a server that reconstructs the foot in 3-D, using pattern recognition and shape analysis algorithms. The 3-D image of the foot can be displayed onscreen in less than one minute. Finally, the system assigns a unique identification code to each image, which will subsequently be used to design the customized insole.

At the same time, this technology is also applied in the manufacturing process through 3-D printing, opening the way for more creative designs and the customization of the functional properties of resistance and flexibility, adapting them to the specific needs of each user and activity.

The power and precision of SUNfeet technology allow optimal customization: Not only are the insoles adapted to the anatomy of the foot, but also to the characteristics and lifestyle of each user. With this in

mind, three different models of insole have been created (Sports, Casual and Elegant), taking into account the type of activity and the characteristics of the footwear in order to select the most suitable materials and thicknesses. Thus, the impact cushioning, energy return and pressure distribution requirements are adapted to each use and to the characteristics of each individual.

Commercial information is available on the website www.sunfeet.es and the app is available free through the App Store and Google Play.

Museum Exhibition

The Instituto de Biomecánica (Biomechanics Institute - IBV) has introduced, as part of the Science Museum "Príncipe Felipe" of Valencia, this SUNfeet technology, incorporated as a new module of the exhibition "We Take Care About Your Quality of Life."

IBV Director Javier Sánchez Lacuesta reminded those present that "this exhibition, promoted by CVIDA association, was developed by IBV in collaboration with the Science Museum and opened in October 2007 in order to make available technologies, products and services that take care of citizens' health and well-being. This is an interactive show in which the visitor can check their skills in different environments and attractions."

Foot care is essential to reduce injuries that limit the normal activities. Using comfort insoles keeps feet healthy during daily activity. SUNfeet combines a precise system of capturing and digitizing the foot and a 3D printing system that allows development of fully customized insoles.

The user can select the insole that best suits his lifestyle: Casual insoles for continual-use shoes that achieve comfort and reduce foot fatigue; elegant insoles that fit with most elegant and formal shoes; and sports

insoles that improve performance and prevent injuries.

Juan Carlos Gonzalez, IBV Clothing Director, showed attendees the performance of this system, highlighting the ease of use, accurate capturing of the [foot](#) and versatility of the system that allows [insoles](#) perfectly tailored to the needs and characteristics of the user and the function to which they are intended.

Provided by Asociacion RUVID

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