nanofoot
materials, components and footwear
with enhanced comfort properties

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The research leading to these results has received funding from the European Union's Seventh Framework Programme managed by REA - Research Executive Agency http://ec.europa.eu/rea (FP7/2007-2013) under grant agreement n° FP7-SME-2013-2-606570.

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ADVANCED AND INNOVATIVE NANOTECHNOLOGY TO DEVELOP NEW FUNCTIONAL PRODUCTS

leathers and polymer components for footwear products

http://nanofoot.ctcp.pt

- FUNCTIONALITY
  - ANTIMICROBIAL PROPERTIES
  - ELECTRICAL AND THERMAL CONDUCTIVITY
  - WATER RESISTANCE
  - BREATHABILITY
- QUALITY
- HEALTH
- ENVIRONMENT

More differentiated, high added value and marketable materials and footwear

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NANOTECHNOLOGY IMPROVE THE COMFORT OF YOUR SHOES

Antimicrobial properties, thermal and electrical conductivity, water resistance and breathability are some of the functional characteristics of a shoe could benefit from the use of nanotechnology and lead to the development of more comfortable footwear.

http://nanofoot.ctcp.pt

Starting date: 01-09-2013
Duration: 24 months

THE PROJECT

Nanofoot is an European R&D project to develop advanced and innovative nanotechnology based solutions for leathers and polymers components for footwear products, aiming a new sustainable and customer-driven production of consumer goods; where the health, environment, high quality of components, fair marketing communication and competitive sales price are combined to promote the competitiveness of the companies.

Nanofoot partner's work in order to develop a technological shoe able to combine comfort with environment care. Nanofoot wants to change the concept of the shoe and make it functional, from the production to final disposal, using accessible, high-performance materials. Nanofoot explored the potentialities and the benefits of nanoparticles (NPs) available in the market to develop new functional materials & products. The final objective to get differentiated, high added value and marketable materials and footwear consumer goods, that satisfy the needs and expectations of the final consumers.

The results are now available: new leathers and microfibers, new polymers and innovative footwear.

Nanofoot project is supported by the European Executive Research Agency (REA) and involved five SMEs and four RTD Centres, from Portugal and Spain.

RESULTS

1. New leathers and microfibers
Bacterial and fungal resistant leather and microfibers based on nanoparticles/nanofillers.

Water resistance leather.

Usable in shoes outer part, shoes lining and insocks.

2. New composites
Polymers and composites with thermal/electrical management properties based on nanoparticles/nanofillers.

Antistatic nanocomposites implementation in the footwear industry would improve both comfort and security as they will reduce the electrostatic charges accumulation.

Usable in soles and insoles.

3. Innovative Footwear
Footwear thermal comfort.

Antistatic and electrical conductive footwear.

Vegan footwear for comfort fashion segments.

Leather made footwear for special orthopaedic segments.

Shoes benefit from the functional characteristics of materials such as: bacterial and fungal activity reduction; water resistant, breathability, thermal comfort.

4. User and environment friend processes
Economically interesting processes for producing materials and goods with an acceptable cost, similar or up to 5 % higher that their actual production cost.

Workers, workplace and environment friendly processes, established taking into account the NPs specificities and these topics during all the phases of the project development.

A decrease the environmental impact of industrial processes by replacing bulk materials by NPs and improving nanoparticle based formulations and their manufacturing procedures.