



Collaborative project targeted to SME
FP7, THEME 4 – NMP

Project full title: Novel Temperature Regulating Fibers and Garments

Project acronym: NoTeReFiGa

Grant Agreement no.: NMP2-SE-203831

Start date: 1/1/2009

Duration: 48 months

EC Grant: 2,893,390 Euro

Summary

The objective of the project is to develop novel temperature regulating fibres and innovative textile products for thermal management, selected by the SME segment of the textile industry in Europe. The temperature regulating effect is achieved by novel methods of incorporating large amounts of phase changing materials (PCM) in textile fibres. When the body temperature increases, the PCM melts and absorbs the heat from the body in the form of latent heat. Then, when the temperature drops, the PCM crystallizes and the stored heat is released again. Clothes with built-in thermo-regulating properties provide maintained thermal comfort in difficult thermal environment and physical activity situations, without putting on or taking off clothes. Such smart clothing would reduce discomfort caused by accumulation of sweat/moisture in the clothing, and also shivering during varying activity levels and ambient conditions. The innovative concepts to be developed will outperform presently available materials for thermal management in garments.

The concept is based on two main ideas. One idea is based on processing concepts that rely on compounding/mixing steps to provide suitable rheological properties of complex mixtures of polymers and PCMs followed by bi-component melt spinning to fibres with a core/sheath structure confining the PCM to the core. New bio-based (PLA) and conventional synthetic polymers for fibres (PP, PET, PA) are here addressed. The second idea is based on a new concept for incorporating PCMs in wet spun cellulose fibres based on direct addition of free PCM to a cellulose solution. A large and intense part of the project will be devoted to product related research, lead by the SMEs in the project. In particular, specific, value-added products are targeted within underwear, sports, leisure and home textiles. The work will aid in the transformation of the European textile and clothing industry from commodities into specific, value-added high-tech products. Addcomp Holland BV is a SME partner in this NoTeReFiGa project and active in compounding novel PCM alloys.

Website: <http://extra.ivf.se/noterefiga>

http://cordis.europa.eu/fetch?ACTION=D&SESSION=&DOC=1&TBL=EN_OFFR&RCN=6417&CALLER=OFFR_TM_EN