



maturolife®

Metallisation of Textiles to make Urban living for Older people more Independent Fashionable

Project Information Sheet v2

Project Area	NANOTECHNOLOGIES, ADVANCED MATERIALS, BIOTECHNOLOGY AND PRODUCTION, SMART TEXTILES, ACTIVE AND HEALTHY AGEING
Coordinator	COVENTRY UNIVERSITY Dr Andrew COBLEY aa2266@coventry.ac.uk
Partners	Eurocarers - Association Européenne Travaillant Avec Et Pour Les Aidants Non-Professionnels - BE Uniwersytet Przyrodniczo-Humanistyczny w Siedlcach - PL Asociación para la Promoción, Investigación, Desarrollo e Innovación Tecnológica de la Industria del Calzado y Conexas de La Rioja - ES Calzados Pitillos S.A. - ES Luksja Sp. z o.o. - PL Institut Français du Textile et de l'Habillement - FR Instituto Tecnológico de Aragón - ES Bertin Aubert Industries - FR A-Gas Electronic Materials - UK Printed Electronics Ltd - UK Muebleconfort - ES Emo SNC - IT Plasmachem Produktions-Und Handel Gmbh - DE Univerza v Mariboru - SI Innovation Service Network Podjetnisko in Poslovno Svetovanje Doo - SI AGE Platform Europe Aisbl - BE Geds Teknoloji Hiz. ve Dan Ltd Sti - TR International Project Management, Plating and Materials - FR Sensing Tex S.L. – ES
Website	www.maturolife.eu
Benefits	Novel initiative to put creative and artistic design at the heart of an innovation journey for the benefit of older persons
Keywords	Materials engineering ; selective metallisation ; assistive technology ; older people ; electroless catalyst ; nanoparticle ; urban ; plating ; ageing
Type of solution	Mix of innovative design and breakthrough electroless technologies
Duration	01/01/2018 – 31/12/2020
Budget	€ 5 990 075
Contract Number	760789



Summary and objectives

Project Overall Objective: The overall objective of the MATUROLIFE project is to put creative and artistic design at the heart of innovation journey, and using it to produce three Assistive Technology prototypes that will make urban living for older adults easier, more independent, fashionable and comfortable.

Abstract:

Assistive technology can be a key tool for enabling older people to live independently. However, the design of assistive technology devices is often poor, undermining the end-user acceptance. **Therefore, too often older persons give them up instead of benefitting from them.** Building on the most advanced technology, the project **aims at addressing this gap by co-designing prototypes of new assistive technologies with end-users: older persons and their informal carers.** Maturolife will thus achieve a better integration of sensors into fabrics and textiles, allowing designers to create AT products for older people that are not only functional but also more desirable and appealing as well as being lighter and more comfortable.

In order to facilitate design-driven innovation, the MATUROLIFE project integrates creative artists and fashion designers in the research team. The project also builds on a structured participation of end-users all through the research, creation and testing processes. It follows a genuine co-design approach, taking the form of qualitative interviews and co-creation workshops where older persons and their informal carers from nine European countries are directly involved and work together with designers. Designers feed the technical partners with the results of the discussion to help them develop prototypes. Older persons and informal carers are then invited to test the suggested solutions and share their feedback and suggestions. MATUROLIFE aims at developing pilot solutions demonstrating proof of concept and able to reach industrial scalability.

This ambitious project brings together 20 partners: 11 SMEs from 9 EU countries, RTDs, NGOs and academics in a €6 million, 36 month project.

Outcomes:

The prototypes will be linked to:

- **Clothing:** the discreet incorporation of sensors to alert for movements, vital signs and dehydration. Dehydration is particularly important (urban areas are hotter) which is associated with increased rates of urinary tract infections, constipation, etc.
- **Furniture:** sofas and seats with sensors to detect ambient and body temperature – to prompt activity and an adjustment of environmental conditions to meet individual needs.
- **Footwear:** shoes for tracking and warning of danger. Many older people live in small flats in urban environments and this assistive technology would help to avoid falls (as well as alerting to collapse) particularly for visually impaired and with blue tooth beacons and receptors, safe areas could be created. In addition, this type of assistive technology could support tracking and way-finding.



On the technical side, the result will be person-centric products employing highly conductive textiles which are more functional, lighter and have a greater lifetime than conventional textiles without existing technological constraints for example, added wiring.

Impacts

The population of older people in Europe is increasing and there is a growing trend for these older people to live in urban environments. It is a key European societal challenge to ensure that older people have happy, secure and healthy lives and assistive technology will play an increasing role in ensuring that is achieved. However, current assistive technology is often designed to be purely functional with little thought for aesthetics or fashion. MATUROLIFE will have a high impact across Europe by designing assistive technology that is not only functional but is fashionable and meets the needs and desires of older people. This will ensure high uptake and retention of assistive technology, create a strong market for the products and lead to a high social and economic impact across Europe particular for the large number of SMEs involved in this consortium. The advanced materials innovations developed in the MATUROLIFE project will give creative and artistic designers the tools to produce designs and creative solutions that are

- Novel
- Higher added-value
- Better performing
- Sustainable
- Improved health, independence and security
- Commercial applications: The growing population of older people
- Societal applications (if it could keep just 10% of over 75's out of long term care could save the EU around €60 billion by 2020)

Value measures	How MATUROLIFE will create value?
Novelty	MATUROLIFE represents a novel approach to selective metallisation of fabrics for Europe and the use of a non-critical raw-material (Cu)
Performance Improvement	The selective metallisation of fibres within the textile/fabric will lead to better integration, connectivity and higher reliability of electronics for wearable technology. In addition the innovative final finishes will add an extra layer of functionality e.g. enabling them to change colour in response to external stimuli
Customisation: adaptation to a specific need	MATUROLIFE is taking a co-creation/emotional design approach to the design of assistive technology for older people. This will ensure the assistive technology developed in the project meets the needs and desires of older people. In addition, the manufacturing approaches investigated within the project will be Industry 4.0 ready allowing and ensuring that they will rapidly respond to customer demands.
Costs	The material and energy costs for MATUROLIFE will be lower than for current methods for making textiles and fabrics conductive. This



	<p>is of extreme importance to industries that are constantly under pressure to drive down cost. The use of inks to create conductive textiles can cost from €3-5/m² but we predict the MATUROLIFE method for selective metallisation of textiles will cost c€2-4/m². Combine this with the price volatility and rarity of palladium and the cost argument is very strong.</p>
Availability	<p>MATUROLIFE plays very close attention to developing standards and a ROI study and business plan for processes to insure that innovations are managed appropriately to maximise market uptake. Exploitation will play a key role in raising awareness of IP and licensing of MATUROLIFE processes.</p>
Usability	<p>The co-creation processes used to design the prototypes and the feedback obtained from older persons throughout their production will mean that the assistive technology has high usability. In addition, each process and prototype demonstrated in MATUROLIFE guidelines, standards and a business plan will be developed to ensure ease of uptake within industry. The processes will also be mapped on the technology roadmap developed so that it is clear the development still required to move them to TRL7 and beyond i.e. the market.</p>

Doing so, MATUROLIFE is answering key challenges outlined in the eHealth Action Plan 2012-2020, and contributes to the European Innovation Partnership on Active and Healthy Ageing's objective to increase by two years the healthy life expectancy in Europe by 2020.