Smart Wearable and Autonomous Negative pressure device for wound monitoring and therapy

Marco Romanelli, Aldo Paolicchi, Valentina Dini, Pietro Salvo, Fabio Di Francesco

University of Pisa
General Information

Project full title: Smart Wearable and Autonomous Negative pressure device for wound monitoring and therapy

Call identifier: FP7-ICT-2011-8

Work programme Objective: Smart Components and Smart Systems integration (b) Micro-Nano Bio-Systems

Grant agreement no: 317894

Total budget: € 8.079.179 Funding: € 6.113.999

Start date: 1 September 2012 Duration: 48 months

Coordinator: EXUS Greece

Project website: http://www.swan-icare.eu/
Consortium

EXUS S.A.

Commissariat à l’Energie Atomique et aux Energies Alternatives

Centre Suisse d’Electronique et de Microtechnique SA

Università di Pisa

CHU Grenoble

Euroresearch

Heamopharm Biofluids

European Wound Management Association Secretariat

Institute of Communications and Computer Systems

Smith & Nephew

SWISSINNOV

SWAN iCare
SWAN-iCare aims at developing an integrated autonomous device for the monitoring and the personalized management of chronic wounds, mainly venous leg ulcers and diabetic foot ulcers.

Such device will allow users to:
- accurately monitor many wound parameters via non-invasive integrated micro-sensors
- early identify infections
- provide remotely an innovative personalised two-line therapy via non-invasive micro-actuators to supplement the negative pressure wound therapy.
Benefits for the patient

- Continuous home monitoring of a number of wound parameters
- Personalised therapy initiated by the physician remotely and adapted to the daily measurements
- Faster wound healing due to the early identification and therapy of potential problems
- Wound deterioration can be identified early and acted upon, therefore leading to reduced morbidity and amputation rates
- Reduced disturbance to patients’ life and possible need for hospitalisation
- Better quality of life with better mobility, more comfort, less stress
Expected Impact: Society and Healthcare

Benefits for society and healthcare

- Reduced healthcare costs as a result of reduced need for hospitalisation
- Reduced burden for the patients' relatives due to faster wound healing and remote monitoring
- Reduced social costs and improved productivity as the patient returns to work earlier
- Increased access to best practice wound care for patients living in remote geographical locations
- Reduced daily nursing visits allows for more new patients' to be added to the case load
Benefits for the medical science

- Advancement of wound care best practice, supply of the most effective wound care protocols available
- Continuous objective measurement contributing to evaluation of wound progress, and treatment effectiveness
- A better understanding of wound healing due to creation of a DATA base of continuous wound parameter measurements
- Potential for new wound healing research