

*Media Release*

**MEDILIGHT – a European project that is developing smart light systems for wound healing**

## **Blue-light treatment for chronic wounds**

**MuttENZ (CH), 4 July 2018 — Using light to improve healing! Within the framework of the European project MEDILIGHT, CSEM and six partners have developed a new solution for treating chronic wounds. This portable device uses blue light to improve and accelerate the healing process. The prototype was presented at the final project event on July 2, 2018 at the URGO laboratories in Dijon.**

Chronic wounds are notoriously challenging to treat, because they do not follow the typical healing process or time-frame. The resulting burden is significant, affecting over 40 million patients and costing healthcare systems €40 billion annually. Blue light is already known for its anti-microbial and anti-inflammatory effects in the initial stages of the healing process; it does not damage tissue, contrary to hazardous UV light. However, clear evidence of the beneficial effects of blue-light irradiation in the later stages of wound healing was still missing, thus hindering the development of effective solutions for complete therapy.

### **When blue light kills bacteria and accelerates wound healing**

With six other partners, CSEM has helped to address this gap through the European project MEDILIGHT. Thanks to this collaboration, it has been demonstrated that blue-light illumination can offer much more than just antibacterial effects. The anti-proliferative functionality has now been clearly proven, showing that blue light prevents an overshooting epidermization in premature healing stages. The consortium has also shown for the first time that blue light can efficiently activate key cutaneous cells, i.e. keratinocytes and fibroblasts with another appropriate light dose and thereby accelerate the final wound-healing process.

The prototype is an ideal solution for a smart, wearable system for blue-light treatment of chronic wounds, such as diabetic ulcers. It further paves the way for the potential future commercialization of devices based on light therapy for monitoring wound healing. Such an application is just one example of the new opportunities created by this project, as the MEDILIGHT approach could also target other medical issues in the future.

### **The new frontier for light in medical applications**

“With the discovery and demonstration of the efficacy of blue light in both antibacterial functions and the activation of key cutaneous cells, MEDILIGHT has allowed URGO to file two fundamental patents,” explains Marielle Bouschbacher, the project’s responsible at URGO. “MEDILIGHT also opens the way for other important application opportunities that will address unmet needs, such as the disinfection of medical instruments and operating environments.” It is important to note that MEDILIGHT was initially a human adventure. Several teams, several countries, and several skill-sets have joined forces to achieve a single goal: to create innovative healthcare solutions for tomorrow.



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### About MEDILIGHT

#### **MEDILIGHT – Miniaturized smart system for light stimulation and monitoring of wound healing**

Chronic wounds represent a significant burden to patients, healthcare professionals, and healthcare systems, affecting over 40 million patients and creating costs of approximately € 40 billion annually. The European project MEDILIGHT aims to develop a smart, wearable medical device that utilizes the proven therapeutic effects of blue light to enhance the healing process. It integrates a temperature- and optical-sensor system for monitoring the status and history of wound healing during therapy. The MEDILIGHT system consists of two components. On the one hand, a disposable wound dressing with a thin and flexible illumination system and integrated sensors provides the correct illumination of the wound and monitors its temperature and blood oxygenation. On the other hand, a miniaturized non-disposable electronic module guarantees controlling, data acquisition and wireless communication.

MEDILIGHT is a European consortium funded within the H2020 Framework Program with an EU contribution of EUR 3.2 million started in February 2015, the project will come to an end in July 2018. The consortium builds on the competencies of the following seven partners: Technische Universität Berlin (TUB), Germany; Laboratoires URGO, France; Ruprecht-Karls-Universität Heidelberg, Germany; Centre Suisse d'Electronique et de Microtechnique SA (CSEM), Switzerland; SignalGeneriX Ltd, Cyprus; Microsemi Semiconductor Limited, United Kingdom; and AMIRES s.r.o., Czech Republic.

Project website: [www.medilight-project.eu](http://www.medilight-project.eu)

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### About CSEM

#### **CSEM—technologies that make the difference**

CSEM, founded in 1984, is a Swiss research and development center (public–private partnership) specializing in microtechnology, nanotechnology, microelectronics, systems engineering, photovoltaics, and communications technologies. Around 450 highly qualified specialists from various scientific and technical disciplines work for CSEM in Neuchâtel, Zurich, Muttenz, Alpnach, and Landquart.

Further information is available at [www.csem.ch](http://www.csem.ch)



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