Thermal based Smart bandages

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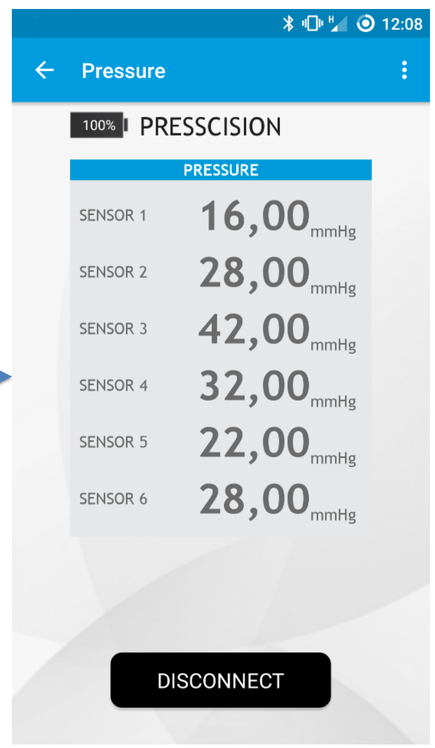
Introduction

Chronic wounds are an increasing problem in modern society. Millions of people are affected with chronic skin ulcers and treatment of these wounds has been estimated to cost billions annually. Poor care and follow up of these wounds can lead to infections, amputation and even death. Nowadays, assessment and monitoring of chronic wounds is based on a visual inspection by medical professionals. This method is subjective and its reliability depends on the assessment criteria of the treating doctor. A thermal based smart bandage can change this.

Pressure Measurement

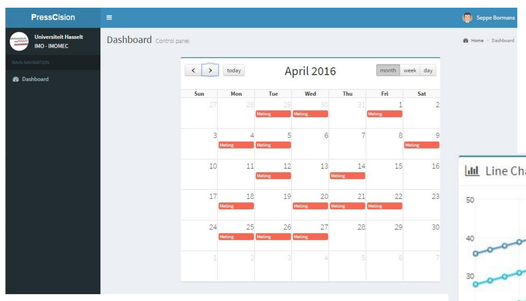
Real – time measurements

By integrating sensors in compression socks or compression bandages, the external applied pressure can continuously be monitored

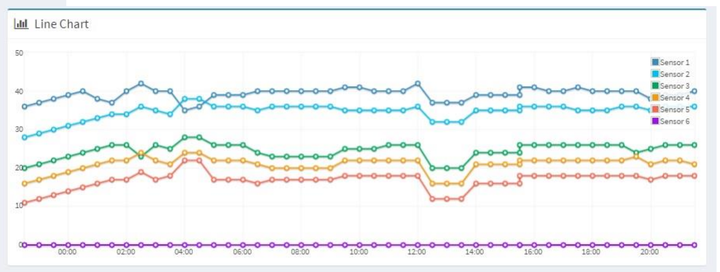


The measured data is processed by the microcontroller and visualized by the application or dashboard

Results

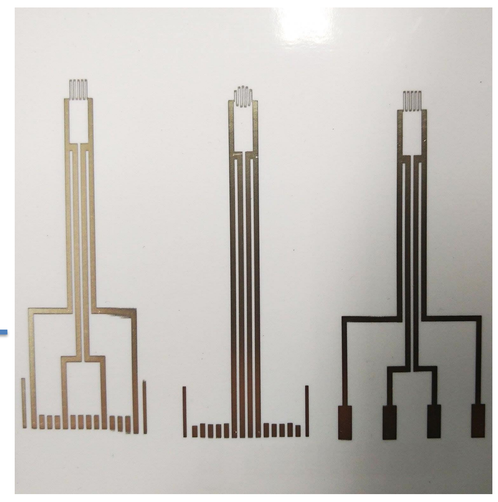


Treating doctor can check the daily pressure values at each consultation and provide feedback



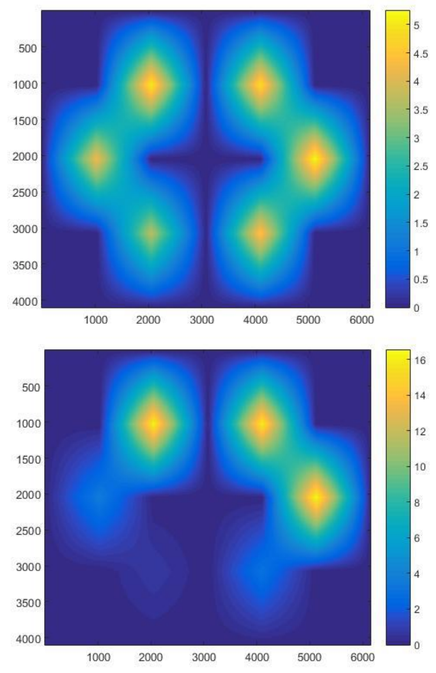
Thermal based Bandages

Inkjet printing allows the development of sensors with different sizes



Integration of these sensors in bandages allow the monitoring of wounds and the detection important parameters

Analyzing the measured data gives more insight in the wounds thermal conductivity, wound exudate, wound seize and wound closure can be determined



Pressure Measurement

By integrating printed sensors in bandage, a system can be developed which can monitor wounds and measure important parameters in an easy and non-invasive way. With the upcoming eHealth concept, the system can be made compact and mobile which allows monitoring a patient in his familiar environment.

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