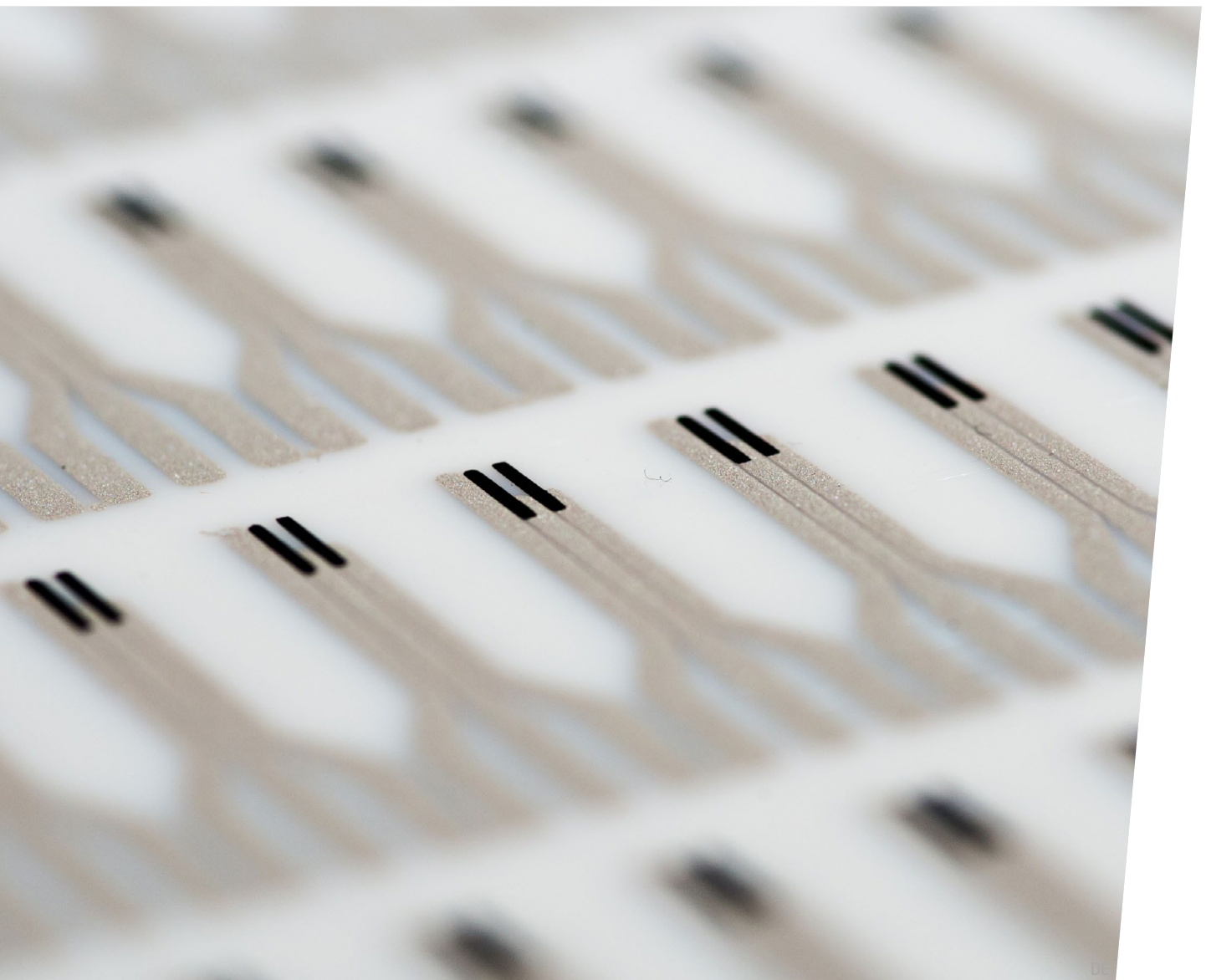


Tech Offer: Wound Infection Sensor

Our sensor technology offers objective wound status assessment.



THE INNOVATION COMPANY

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Challenge

There are approx. 20 mio patients with **chronic wounds** in Europe. Chronic wounds are particularly susceptible to bacterial colonization, which can lead to wound infection. In addition, surgical wound infection is estimated to affect between 30-40 surgical patients per 1000 surgeries, and its effects can be life threatening, particularly in older patients. The **treatment of infected wounds** incurs additional costs of more than 20 billion Euros per year in Europe.



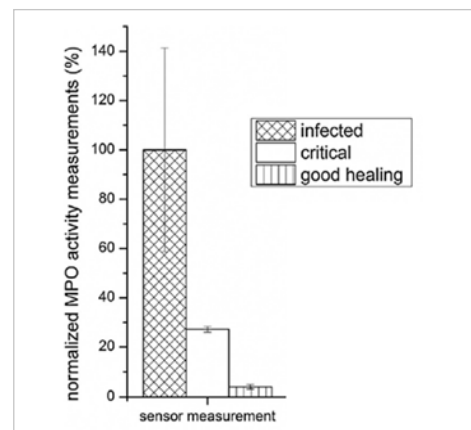
Solution

A sensor to detect wound infection offers a new possibility to collect objective information about the condition of a wound, e.g. during wound dressing changes. Myeloperoxidase (MPO) can serve as a biomarker for wound infection. At the onset of an infection, leukocytes increasingly produce MPO, which is released into the wound. A wound fluid sample is collected by swabbing and transferred into a small volume of physiological NaCl solution. **MPO enzyme activity** is detected directly in the sample solution by using an electrochemical sensor that measures H_2O_2 consumption by MPO.



Results

In a pilot study, we tested samples from 15 different wounds. Results obtained by the sensor were compared with a medical diagnosis by an experienced physician who classified the wounds as either as „infected“, „critical“, or „good healing“. MPO activity correlated well with the degree of wound infection and sensor results were **consistent with the medical diagnosis**.



Application

This sensor technology can be developed into a product for different applications. The system can be used as a **Point-of-Care device for rapid wound status assessment** in the hospital or as a test strip device for the doctor's office or for nurses who are doing mobile wound care.



Hajnsek M, Schiffer D, Harrich D, et al. An electrochemical sensor for fast detection of wound infection based on myeloperoxidase activity. *Sensors Actuators, B Chem.* 2015;209:265-274. doi:10.1016/j.snb.2014.11.125.