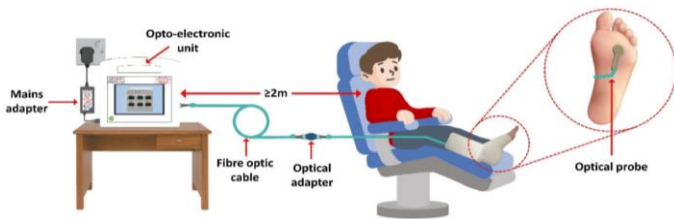


Wearable wound monitoring device using optical fibre technology

In brief

Chronic wounds are a significant burden to healthcare worldwide. Our system uses an array of optical fibre sensors to monitor multiple wound healing biomarkers: temperature, humidity, ammonia, and CO₂ (related to pH). We aim to improve wound care, and reduce routine appointments and costs by remotely notifying a patient and clinician when the wound is in an adverse state via optical fibre sensing.

MHRA approval has been obtained for a clinical trial on 10 patients with DFUs.



1. The opto-electronic unit sends light into the optical probe
2. Light at the end of the optical probe interacts with the wound's external micro environment and is reflected back
3. The optical signal is analysed by the opto-electronic unit software, indicating temperature, humidity, ammonia, and CO₂
4. The opto-electronic unit displays the analysis result



Key benefits:

Measures multiple biomarkers to monitor wound healing

Optical fibres are lightweight, flexible and unexpensive

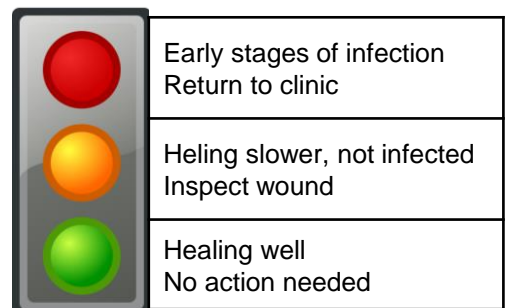
Non-invasive, no interaction with exudate

Allows for prompt clinical intervention only when required, and reduces number of clinical appointments

The technology will be further developed to a wireless and wearable sensor, with the readings (temperature, humidity, ammonia, and CO₂) sent remotely to a healthcare professional.



The readings will be processed and analysed by software to give an indication of wound healing status. A recommendation for further intervention will be given to the healthcare professional, similar to a traffic light system.



IP

Patent application,
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