

# Oxifi: A Wireless, Adhesively-Mounted Pulse Oximeter for Continuous Clinical Monitoring

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## Clinical Challenge

Existing pulse oximeters are attached to patients' fingers and connected to an external display, limiting comfort and mobility. They often get disconnected or dislodged when patients move, leading to false alarms.

## Solution

Oxifi is a wireless, adhesively-mounted pulse oximeter for continuous clinical monitoring that is comfortable and unobtrusive. It possesses the following features:

- (1) Reflective pulse oximetry with embedded LEDs and photodiodes
- (2) Bluetooth-based communication with a remote display, demonstrated with a mobile phone
- (3) Secure adhesive-based attachment to the skin
- (4) An Android app-based interface displaying pulse, spO<sub>2</sub>, and PPG waveform readings

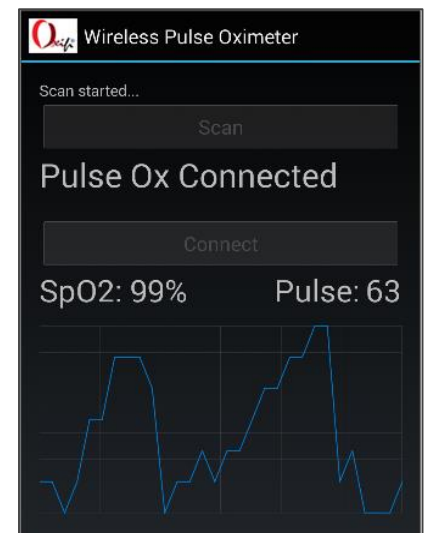
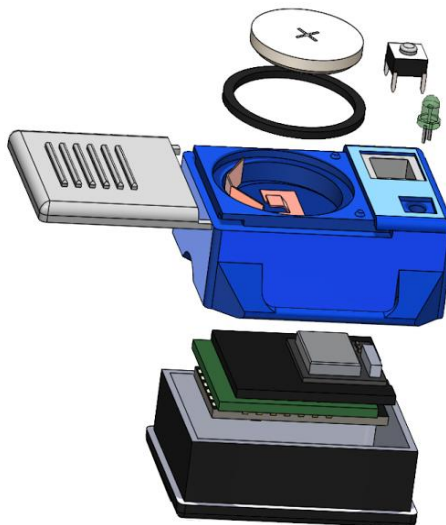
## Performance

### Pulse:

- 68% of readings were within 1% of off-the-shelf device
- 84% of readings were within 2% of off-the-shelf device

### Oxygen Level:

- 88% of readings were within 1% of off-the-shelf device
- All readings were within 2% of off-the-shelf device



Oxifi has an indoor range of 25 meters and a cost comparable to current commercial devices, making it suitable for use in clinical settings.