

Zürich. March 1. 2023

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Athletes and active people are now ahead of the game with accurate core body temperature monitoring on the wrist

greenteg's CALERA® technology develops the most accurate sport wrist algorithm that gives athletes more convenience in measuring core body temperature

Core body temperature monitoring is essential for sports people to help prevent overheating, to train and improve physical performance as the body temperature increases and for more effective cooling. Even non-sporting people gain health benefits by raising their body temperature during exercise such as more effective weight loss and an improved immune system. As temperature behavior is individual, the ability to monitor your own temperature with a high level of accuracy means that wellness and sporting activity can be undertaken far more effectively.

The core body monitoring solution developed by greenteg is conventionally positioned on the torso. For convenience in everyday activity, a wrist-worn monitoring device (such as inside a sports watch) is more appealing. greenteg has developed a sport wrist algorithm to cater to the convenient wrist worn position for tracking core body temperature during training and high-intensity sport activity.

An internal validation study was conducted to verify the accuracy of the algorithm. 16 volunteers participated in this study and engaged in physical activities under various circumstances. The outcome demonstrates that the greenteg model offers the most precise core body temperature solution for the wrist. The algorithm compensates for environmental thermal influence, with an accuracy Bias of 0.02°C, a Limit of agreement: 0.83°C and a mean absolute error of 0.34 °C. This level of accuracy is comparable with current state-of-the-art fever clinical external thermometers.

"Our wrist algorithm presents an innovation in monitoring core body temperature for high intensity activity. The integration of the CALERA® technology into smartwatches help active people to improve their performance in heat, improve the immune system and get a better understanding of their own individual heat behavior," says Dr. Lukas Durrer, Co-founder and Vice President of greenteg. *"This is a breakthrough that demonstrates our continuing commitment in our thermal sensing technology research; thereby expanding the possibilities for integration across a range of different scenarios."*



The CALERA® technology has been developed so that it can be easily integrated into sports and other wearable devices. The release of these new capabilities signals a step for greenteg towards new and rewarding partnerships and opportunities.

About greenteg AG

Founded in 2009 as an ETH University of Zurich spin off; greenteg develops, manufactures, and markets thermal sensors to industry, OEMs and research labs. Manufactured in Switzerland, their team of over 40 specialists and researchers continuously develop their sensor technology. In 2022, CES® (Consumer Technology Association) awarded greenteg three awards for Calera® and CORE, their body temperature monitor used within the Health & Wellness, Sport & Fitness Wearable industries.