

# SMART WEARABLE DEVICE TO MEASURE SWIMMING POWER AND EFFICIENCY

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## BACKGROUND

The market for wearable technologies in sports is substantial and forecasted to grow at an impressive rate since there is a rising awareness of how minor changes in technique may lead to exponential changes in performance. This \$6.51 billion market in 2017 is expected to almost double to \$12.11 billion in 2020.

Among the different market segments, swimming remains one of the very popular sports activities with significant participation levels among the general public and organized youth sports clubs.

Fitness trackers are commercially available that target all forms of physical activity/sports, including waterproof devices designed for swimmers. However, it is still very difficult for trackers to evaluate swimming efficiency, which is much more than just measuring swimming speed or lap count.

## TECHNOLOGY

The technology is a wearable device worn on the hand that can quantify the technical efficiency of swimmers. This waterproof device comprises various components including wireless force sensors and accelerometers for real-time data collection, and a processor for data analysis.

The device not only measures strokes counts and speed, but also calculates the real-time power of the swimmer measured in watts output. It will allow amateur and elite competitive swimmers to more effectively evaluate their performances by introducing watts training to the pool.

## COMPETITIVE ADVANTAGES

- Measurement and analysis of power losses and gains in relation to stroke technique
- Evaluation of technical efficiency of swimmer

## APPLICATIONS

- To assist competitive swimmers and their coaching and training staff to train more effectively
- To assist recreational swimmers who swim for exercise with measuring and maximizing their energy expenditure, for aerobic and cardiovascular benefit
- To possibly assist participants in other sports activities where measurements of hand motion could potentially be utilized for sports analytics

## TECHNOLOGY DEVELOPMENTAL STAGE

- Second generation prototype under development; will be tested by competitive swimmers

## BUSINESS OPPORTUNITY

Patent pending technology available for partnering or licensing opportunities

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