THE BUSINESS PARTNER FOR YOUR IDEAS

INTELLIGENT HYDRATION SYSTEM

HARDWARE, CIRCUITS, & SENSORS

Sensor for determining fluid level in the liquid reservoirs of hydration systems.

TECHNOLOGY TYPE
Instrumentation

STAGE OF DEVELOPMENT
Ongoing research to refine initial prototype.

IP PROTECTION
U.S. Utility Patent Issued
Liquid Level Sensor Measuring a Characteristic Indicative of Inductive Coupling
US10161779B2

LEARN MORE
Reference Number: U-5949

Nick Wilkes
Technology Manager
nick.wilkes@tvc.utah.edu
801-587-0515

TECHNOLOGY SUMMARY
Endurance activities, such as mountain biking, running, hiking, and military operations require proper and continuous hydration. Hydration systems traditionally used for outdoor activities require manual monitoring of water levels, either by gauging a pouch's weight change, inspecting the bladder, or using commercially available flowmeters. Lack of accurate information can lead to underestimation of remaining water and potentially dangerous situations.

The *Intelligent Hydration System* is a fluid level sensor that enables easy-to-use bladder monitoring and can be integrated with most commercial hydration backpacks. The technology consists of two sensors connected to a small circuit that can be attached to either side of any pre-existing reservoir. A light-emitting diode display communicates the bladder's fluid level to the user. The kit provides an accurate reading of the fluid content, irrespective of shaking and movement.

FEATURES AND BENEFITS
- Facilitates continuous, real-time hydration monitoring.
- Enables users to anticipate needs, particularly in water scarce areas.
- Integrates with any existing fluid bladder or reservoir.
- Provides a readout of fluid level during activity without removing the hydration system from the pack.

INVENTOR PROFILE
Gianluca Lazzi, Ph.D., Chair & Professor – Electrical & Computer Engineering

DATE UPDATED: 7/25/2019