Low Cost Wireless Spirometer Using Acoustic Modulation

Tech ID: 27441 / UC Case 2016-924-0

BRIEF DESCRIPTION

The present invention relates to portable Spirometry system that uses sound to transmit pulmonary airflow information to a receiver.

FULL DESCRIPTION

Home monitoring of lung function is becoming increasingly important in the management of asthma and chronic obstructive pulmonary disease (COPD), which affects over 400 million people. Spirometers measure the speed (airflow) and lung volume of air in and out of the lungs. Thus, spirometers are used by healthcare providers to diagnose chronic lung conditions and to determine drug efficacy. Importantly, patients also use spirometers to monitor whether a treatment for their chronic lung condition is improving their breathing. Existing portable spirometers that measure airflow must use sensors and electronics, making them cost prohibitive for some patients and inconvenience due to their bulky size (roughly the size of a laptop). Existing smaller portable (wireless) spirometers only measure air volume (not airflow), which is generally considered to be a poor indicator of lung function.

The present invention provides a small portable spirometer device that measures airflow, and transmits the information wirelessly to a second device (i.e., receiver).

SUGGESTED USES

The present invention can be used to monitor a chronic lung condition and treatment efficacy at home by a patient, or by a healthcare provider. It can also be used by patients or healthcare providers to find the cause of chronic lung conditions and assess the effects of contaminants on lung functions, generally.

ADVANTAGES

The present invention is comparably cheaper and more convenient (due to small portable size) than alternative spirometry devices that measure airflow. Additionally, unlike existing small portable spirometers that measure lung volume, the present invention measures airflow, which is generally considered to be a better indicator of lung function.

STATE OF DEVELOPMENT

Device is currently in development.

CONTACT

Alvin Viray
aviray@uci.edu
tel: 949-824-3104.

OTHER INFORMATION

CATEGORIZED AS

- **Biotechnology**
  - Genomics
  - Health
  - Proteomics
- **Engineering**
  - Engineering
- **Materials & Chemicals**
  - Nanomaterials
- **Medical**
  - Devices
  - Diagnostics
  - Research Tools
- **Nanotechnology**
  - NanoBio
  - Tools and Devices

- **Research Tools**
  - Nucleic Acids/DNA/RNA
  - Screening Assays
- **Veterinary**
  - Diagnostics

RELATED CASES

2016-924-0

UCI Beall Applied Innovation

5270 California Avenue / Irvine,CA
92697-7700 / Tel: 949.824.2683