



US009510782B2

(12) **United States Patent**  
**Kamath et al.**

(10) **Patent No.:** **US 9,510,782 B2**

(45) **Date of Patent:** **Dec. 6, 2016**

(54) **SYSTEMS AND METHODS FOR REPLACING SIGNAL ARTIFACTS IN A GLUCOSE SENSOR DATA STREAM**

(75) Inventors: **Apurv Ullas Kamath**, San Diego, CA (US); **James H. Brauker**, Addison, MI (US); **Aarthi Mahalingam**, San Diego, CA (US); **Ying Li**, San Diego, CA (US)

(73) Assignee: **DexCom, Inc.**, San Diego, CA (US)

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 214 days.

(21) Appl. No.: **13/439,701**

(22) Filed: **Apr. 4, 2012**

(65) **Prior Publication Data**

US 2012/0203467 A1 Aug. 9, 2012

**Related U.S. Application Data**

(63) Continuation of application No. 11/498,410, filed on Aug. 2, 2006, now Pat. No. 9,247,901, which is a continuation-in-part of application No. 10/648,849, filed on Aug. 22, 2003, now Pat. No. 8,010,174, and a continuation-in-part of application No. 11/007,920, (Continued)

(51) **Int. Cl.**

**A61B 5/00** (2006.01)  
**A61B 5/1486** (2006.01)  
**A61B 5/01** (2006.01)  
**A61B 5/145** (2006.01)

(52) **U.S. Cl.**

CPC ..... **A61B 5/14865** (2013.01); **A61B 5/14532** (2013.01); **A61B 5/14539** (2013.01); **A61B 5/6848** (2013.01); **A61B 5/7203** (2013.01); **A61B 5/01** (2013.01); **A61B 5/145** (2013.01); **A61B 5/726** (2013.01); **A61B 5/7239** (2013.01); **A61B 5/7257** (2013.01); **A61B 2560/0252** (2013.01)

(58) **Field of Classification Search**

CPC ..... A61B 5/14532  
USPC ..... 600/345, 347, 365  
See application file for complete search history.

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*Primary Examiner* — Christian Jiang

(74) *Attorney, Agent, or Firm* — Knobbe Martens Olson & Bear, LLP

(57) **ABSTRACT**

Systems and methods for minimizing or eliminating transient non-glucose related signal noise due to non-glucose rate limiting phenomenon such as interfering species, ischemia, pH changes, temperatures changes, known or unknown sources of mechanical, electrical and/or biochemical noise, and the like. The system monitors a data stream from a glucose sensor and detects signal artifacts that have higher amplitude than electronic or diffusion-related system noise. The system processes some or the entire data stream continually or intermittently based at least in part on whether the signal artifact event has occurred.

**28 Claims, 37 Drawing Sheets**

