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**Poeze et al.**

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- (54) **ANALYTE MONITORING USING ONE OR MORE ACCELEROMETERS**
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(57) **ABSTRACT**  
 The present disclosure relates to methods, devices, and systems for measuring a blood analyte, such as glucose. The disclosure relates more specifically to the use in such methods, devices, and systems of one or more accelerometers to aid in the collection of data, operation of the device, filtering, and other uses. In some embodiments, the accelerometers are three-dimensional accelerometers. An accelerometer can be used in conjunction with analyte monitoring that may be performed with infrared, near infrared, or other wavelength spectroscopy. The accelerometer may allow a monitoring instrument to expect noisy measurement data, indicate positioning of a measurement site for improved expected results, indicate position of the instrument, or help the user properly place or control the instrument. It may also improve analyte monitoring by providing motion information that can be used to help determine and reduce or remove movement-related signal artifacts or noise that may be present within the monitoring signal.

**13 Claims, 9 Drawing Sheets**

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- (52) **U.S. Cl.**  
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- (58) **Field of Classification Search**  
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See application file for complete search history.

