

A b s t r a c t

METHOD OF DETERMINING A CURRENT GLUCOSE VALUE IN A TRANSPORT FLUID

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The invention relates to a method for, in particular, continuously determining a current glucose value in a transport fluid, in particular blood, of an organism, comprising the steps of

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a) Determining a measurement series using a sensor device, comprising at least two measured values for a tissue glucose value that are spaced apart in time in the tissue surrounding the transport fluid,

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b) determining the tissue glucose value using the determined series of measurements based on a measurement model in the form of a linear or non-linear function, with the measurement model measuring values of the sensor device measuring tissue glucose values taking into account at least one measurement noise value are assigned,

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c) providing at least one state transition model, with the at least one state transition model being used to assign at least one glucose value in the transport fluid to the determined tissue glucose values, taking into account at least one process noise value, and

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d) estimating the current glucose value in the transport fluid based on an approximation of at least one provided state transition model and the determined tissue glucose value using at least one Kalman filter in the case of a measurement model in the form of a linear function or at least one extended Kalman filter Case of a measurement model in the form of a non-linear function.

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(Fig. 3)