

Title (en)

METHOD AND APPARATUS FOR NONINVASIVELY DETERMINING HEMATOCRIT

Title (de)

VORRICHTUNG FÜR INHALATORS

Title (fr)

PROCEDE ET APPAREIL DE DETERMINATION NON INVASIVE DE L'HEMATOCRITE

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Application

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Abstract (en)

[origin: WO9632883A1] This invention is a method and apparatus for non-invasiveness in determining hematocrit, utilizing the frequency dependent electrical impedance characteristics of whole blood by electrically stimulating a patient body portion containing a vascular compartment with a current source over a range of frequencies. A hematocrit measurement system includes a signal generator and demodulator [SGD] (34) that sends an applied signal to an electrode pod (36) that applies a current to a limb of a patient. The electrode pod (36) receives resulting measured voltage signals and provides them to the SGD. The SGD provides to a personal computer [PC] (42) signals indicative of the current passing through the limb of the patient and the resulting voltage. The voltage and current may be measured for various frequencies over, for example, a range from about 10 kHz to about 10 MHz. The electrical impedance from the blood alone is isolated from the total limb impedance from the blood, tissue, bone, etc. by determining the difference between measurement at different blood volumes. The hematocrit is determined by the PC based on inphase and quadrature data provided by the SGD. A neural network (52) may be useful in determining the hematocrit from the blood impedance patterns.

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