

The non-invasive method for measuring the blood content in various regions of the body and the device for the realization of the method have been proposed. According to the method, the region of the body is exposed to the flux of the light and the spectral intensity of the transmitted light is measured. Then the tissue hemoglobin content in the examined region of the body is calculated. In addition, the blood hemoglobin content in the same patient is assayed. The blood content in the region of the interest is calculated by the ratio of hemoglobin concentrations in tissue and in blood according to the formula:

$$\varphi = \frac{C_{HT}}{C_{HB}} \cdot 100\%,$$
 where φ is blood content in per cents (v/v), C_{HT} – the calculated concentration of hemoglobin in the tissue, C_{HB} – the measured concentration of hemoglobin in the blood. The device for measuring the blood content in various regions of the body comprises the light emission unit and the unit for measuring the spectral intensity (the units are connected optically with the region of the body under examination), the computing unit for calculating the hemoglobin concentration in the tissue connected to the output of the unit for measuring the spectral intensity, and the data output unit. In addition, the system contains the set-point device for reference hemoglobin concentrations, the unit for ratio calculation with its first input connected to the output of the computing unit for calculating the hemoglobin concentration in the tissue and its second input connected with the set-point device for reference hemoglobin concentrations, and the converter with its input connected to the output of the unit for ratio calculation and its output connected to the data output unit.