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**BLOOD COAGULATION TIME DETERMINATION BY AC
CURRENT PHASE SHIFT RESPONSE MEASUREMENT
SIMULTANEOUSLY WITH THE BLOOD VISCOSITY**

Abstract. There are many methods - biological, chemical, physical (optical, electrical) and mechanical, used to assess the properties of blood and the changes that occur with them in many diseases. The electrical conductivity and impedance are the only electrical parameters employed so far for this purpose in combination with some rheological one as blood viscosity. In this work a virtual instrument based on LabVIEW platform was developed for measurement of the AC current vs. the voltage phase shift caused by a blood sample at 100 mV p-p AC voltage application within the frequency range between 1 Hz and 10 KHz.

The capacitance and the active resistance values of the blood sample determining the AC current/voltage phase shift depend on blood sample properties such as blood cells adsorption and orientation as well as on their fractional volume concentration. Some diseases strongly affect the first two parameters and hence the phase shift value. The combination of the AC current/voltage phase shift with the rheological parameters mostly the blood viscosity allows enhancing of the understanding and the interpretation of the hemorheology results in terms of blood circulation which is of great medical diagnostic importance.

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