NONINVASIVE COLOR VISUALIZATION OF BLOOD CELLS.

Paiziev A., Krakhmalev V., Institute of Electronics Uzbek Academy of Science, Tashkent email: adxam_paiziev@rambler.ru

Introduction: Color visualization are widely spread in biological and medical studies of difference samples. But for this purpose need special treatment of samples under expensive chemical prepares. This procedure is changing native structure biomedical sample and lead to distorted its image under microscope. Other method for color visualization is connected with using interference microscope based on transmission of white light through bio-medical sample. But this microscope have complicated additional and expensive optical system for getting two coherent light.

Materials & Methods: To get most cheep and convenient method color visualization human blood cells, urine, saliva and other physiological liquids without any chemical treatment and using expensive interference microscope we proposed new method based on using ordinary optical microscope and special substrate on what we put the investigating sample. Measurements has been performed for human blood cells, saliva and urine for health perfect and for difference stage cancer patients. Method based on light interference reflected from sample surface and supporter.

Results: Developed new technique for fast in real time regime to get color image of human blood cells without any chemical treatment. This method let us to determine chemical compounds of blood cells by comparison this color image with calibrate color map. In Figure 1 and 2 showed example of color image of human blood cells by new method and black and whit image by ordinary method what used in medical practice.

Discussion and conclusion: We offer new method to get two coherent light based on biomedical sample reflection and special no transparence supporter reflection of the white light. In result we can see color interference picture (Fig.1.) of the biomedical sample under ordinary optical microscope without using any chemical treatment and expensive interference microscope. This method may be used in medical laboratory, hospitals, research centers and individual users for fast public and self diagnostics.

Fig. 1                      Fig. 2