Abstract for undergraduate work

Topic: “Producing of polarization ghost images by means of single photon flux”

In this work method of quantum ghost imaging imaging (QGI) is extended to the case of polarization sensitive objects whose polarization properties are due to linear dichroism. Theory of this concept was developed and it was shown that QGI can be obtained when object illuminated by single photons by SPDC source. Experimental method of measurements was developed for light from type-1 SPDC source of single photons. The experimental setup was developed and based on the proposed method. The studied object is double slit with linear polarizer fixed on it. The first experiments were provided. An ability of obtaining polarization QGI of objects with linear dichroism was demonstrated. In the result the one-dimensional dependence of the azimuth of dichroism was obtained with accuracy 6%.