

**S2-P.17****New Opportunities For Biomedicine**

C. Yu. Zenkova, I. V. Soltys and P. A. Ryabiy

Optics, Printing&Publishing Department, Chernivtsy National University, Chernivtsy, Ukraine

Theoretical and experimental approaches to diagnosing of internal spin and orbital optical flows and corresponding optical forces caused by these flows are offered. These approaches are based on the investigation of the motion of tested particles in the formed optical field. The dependence of the above-mentioned forces upon the size and optical properties of the particles is demonstrated. It is shown that the use of energy internal flows permits to create such optical tweezers which can control particles only by polarization of the incident radiation without changing the form of the beam and its intensity.