

## “Nanoplasmonics and surface enhanced spectroscopy”

### Surface Plasmon Resonance and Oscillation Spectroscopy for Cancer Diagnostics

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Nanotechnology plays a central role in many areas including medicine [1,2]. The discovery of the surface plasmon resonance (SPR) phenomena has provided the basis for developing modern diagnostic methods such as optical biosensors. SPR sensors enable the rapid and highly sensitive detection of biomolecules. Optical spectroscopy techniques as SPR, Raman spectroscopy, Surface Enhanced Raman Spectroscopy (SERS) and Fourier Transform Infrared Spectroscopy (FTIR) can give many important data about the presence and the structure of specific molecules. This information allows to discover new markers, that can be used in cancer diagnosis.

In presented work the surface plasmon resonance phenomenon excited on gold nanofilm was employed to investigate the differences in the structure of blood cells coming from healthy and cancer patients. Blood serum was analyzed using mentioned oscillatory spectroscopy methods.

1. Wojnarowska R., Polit J., Broda D., Gonchar M., Sheregii E.M., Surface enhanced Raman scattering as a probe of the cholesterol oxidase enzyme // *Appl. Phys. Lett.* 106, -2015. -103701.-P. 1-4.
2. Wojnarowska-Nowak R., Polit J., Zięba A., Stolyarchuk I.D., Nowak S., Romerowicz-Misielak M., Sheregii E.M., Colloidal quantum dots conjugated with human serum albumin – Interactions and bioimaging properties // [Opto-Electronics Review](#), -2017