

Nanochemistry and biotechnology

Application of plasma polymer films in bio-sensing field

O.V. Shynkarenko¹, G.V. Beketov¹, M. Vandenbossche² D. Hegemann²

1 V. Lashkaryov Institute of Semiconductor Physics, Natl. Acad. of Sci. of Ukraine. Prospect Nauki, 41, Kiev-03028, Ukraine.

E-mail: o.shynkarenko@isp.kiev.ua

2 Empa, Swiss Federal Laboratories for Materials Science and Technology, Lerchenfeldstrasse 5, 9014 St. Gallen, Switzerland.

Human beings, like other biological species, are known to confront pathogenic microorganisms. New diseases are emerging and are constantly evolving. Modern healthcare allows early diagnosis of many diseases by analyzing biological fluids. The development of science and medicine knowledge leads to a growing number of new methods related to disease identification. This way, new sensors are developed in order to detect in real time the presence of pathogens in human body.

Current work presents one possible application of plasma polymer films in bio-sensing field. We compare sensitivity, selectivity and reproducibility of 4 different types of plasma polymer films. The films tend to stabilize after soaking overnight in standard PBS solution at pH 7.4. Two different pairs of antigen-antibody were tested at each surface. We report here one simple, inexpensive, and environment-friendly method for surface treatment that are suitable for applications in aqueous environments such as, e.g., in the biomedical field.

Results of investigation of the bio-objects using SPR excitation on gold nanofilm are presented.

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