

ION SELECTIVE AND SEMI-PERMEABLE MEMBRANES FOR BIOSENSORS IN BIOMEDICAL APPLICATIONS

Dorota G. Pijanowska, Władysław Torbicz

*Institute of Biocybernetics and Biomedical Engineering, Polish Academy of Sciences,
Warsaw, Poland*

Abstract

In this paper, a comprehensive review based on research, conducted by authors, related to development of biosensors in respect to different membranes applications is presented. The ion-selective membranes were described in terms of factors determining their stability, which depends on lipophilicity of the membrane components. In the case of enzymatic membranes, relation between stability of the biosensor and immobilisation of enzyme molecules *in/on* the membranes/surfaces is discussed. Finally, the semi-permeable membranes application in lab-on-a-chip type devices for development of a sampling probe and flow-through biosensors were described.

K e y w o r d s: biosensors, enzymatic membranes, ion selective membranes, semi-permeable membranes, lab-on-a-chip