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THE ALGORITHMS USED TO DETERMINE THE SURFACE WETTABILITY AND SURFACE TENSION

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ABSTRACT

The surface wettability is one of the basic physical properties used to characterize the materials. The surface tension and related material characteristics, such as wetting, and wetting rate as well as the work of adhesion plays an important role in plastics technology, particularly in the coating process, gluing and a multi-component injection [1]. All these features also affect the degree of absorption and aggregation of materials. This is crucial in biomedical applications, for example determines of the bacterial plaque aggregation on the implants and prostheses surface.

The aim of this work is to present the algorithms used in the study of contact angle, surface tension and surface free energy materials using a goniometer OCA 15EC produced by DATA-PHYSICS company. The techniques of static and dynamic measurements of mentioned above parameters and the algorithms which allow for such measurements are presented. The work shows the results of research on polymers such as polycarbonate and polyethylene terephthalate. These materials are in the form of a film having thickness from 3 to 18 μm and the surface modified by ion implantation using the C^+ ions with dose in the range of 10^{14} to 10^{16} ions/ cm^2 and energy 180 keV. Such modified films are used as membranes in the interferometric study of diffusion.

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REFERENCES

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