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RESERCH OF THE MICROGEOMETRICAL PARAMETERS
OF THE OXYBIODEGRADABLE FILMS

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**Research methodology.** To investigate microscopic geometrical surface parameters of the oxy-biodegradable films the 3D AniCam microscope has been used, which allows to capture images of the topography of the surface samples and their profilograms. The key parameters of the films surface layer and the paint pictures roughness have been determined according to the GOST 2789-72 standard.

**Results.** As a result of the research the main roughness parameters have been defined: maximum and minimum values of roughness profile, maximum height and average height of roughness profile. Maximum values of the films 1 and 2 surfaces microscopic asperities reach up 15–20 microns, and for samples 4 and 5 they attain 12-13 microns. The highest profile roughness has been asset for the films based on HDPE — 10.5–13.4 microns, but for the samples of LDPE films this figure is somewhat lower — 7 microns. The paint layer surface is characterized by abrupt changes in microscopic asperities (from 0 to 15–20 microns). The diameter of halftone dots in the films studied samples ranges from 145 to 153 microns.

**Novelty.** As a consequence of the results of the research we have found out that samples of the LDPE films have a smoother surface structure. The presence of the biological impurities in the films structure increases the roughness of the surface layer. This improves paint layer adhesion, but also can cause the serration of the small picture elements contours.

**The practical significance.** The results of the films surface microscopic geometrical parameters research have confirmed that the structure of the biodegradable films surface layer influences significantly the quality of the printed image and its reproduction and graphic performance. Thus, the surface roughness parameters of printing should be highly considered during the choice of the printing options.