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**CALCULATION OF TECHNOLOGICAL PARAMETERS OF PACKAGES MARKING WITH NANOPHOTONIC ELEMENTS**

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***Research methodology.*** *The article presents the method for determining the technological parameters of marking packages with nanophotonic elements, to develop algorithms to describe it the methods of simulation modeling were used.*

***Results.*** *The algorithm is created for calculation of the optical characteristics of printed markings with nanophotonic elements by the known technological parameters of forming and printing processes of screen and pad printing methods, parameters of the used materials. The algorithm was created to calculate the technological parameters of the printing process for producing markings with the predetermined optical characteristics. The software is developed as a simulation model that is a complex mathematical and algorithmic model of the system.*

***Novelty.*** *For the first time the simulation model is developed for calculation of the technological parameters of nanophotonic elements, providing quality of marking process of printed functional packaging with nanophotonic elements.*

***The practical significance.*** *The created algorithms make it possible to produce printed packaging markings with predetermined optical characteristics. The developed software significantly facilitates and accelerates the calculation processes for producing printed markings with nanophotonic elements that provide the functionality of smart food packaging.*