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**RESEARCH OF BINARIZATION ALGORITHMS IN OUTPUT DEVICES  
OF PREPRESS**

**B. M. Havrysh1, O. V. Tymchenko1,2, M. B. Polishchuk3, H. N. Levytska3, N. R. Druk3**

*1Ukrainian Academy of Printing,  
19, Pid Holoskom St., Lviv, 79020, Ukraine  
dana.havrysh@gmail.com  
2Uniwersytet Warmińsko-Mazurski,   
2, Michała Oczapowskiego, Olsztyn,10-719, Polska,   
o\_tymch@ukr.net  
3Lviv Higher Vocational School of Computer Technology and Construction,  
23, Linkol’n St., Lviv, 79000, Ukraine   
levitskag@mail.ru, marpoli1976@meta.ua*

***Research methodology.*** *Binarization process is used in numerous tasks of pro­cessing and analyzing digital images. However, there is no universal solution of this process, and the methods are selected for each task. Therefore, new methods of binarization, along with their research capabilities and areas of application are of interest from a practical point of view not only in printing. Converting a binary image where the color of each element either black or white is important for solving problems of image recognition, control and analysis of materials, surveillance, video coding and other. Among numerous examples and problems there are two approaches known in the literature: the first is based on the threshold, the second is based on conditions of equal brightness of pixels.*

***Results.*** *Binarization algorithms that use the condition of equal brightness are generally complicated from the computational point of view. This is due to the fact that one of the criteria of constructing a binary matrix is minimum Euclidean distance between binary and grayscale matrices. Then the task is to select from 2n matrices. The researched algorithm searches for the maximum element of the matrix S, as the number of steps of bn procedure are required.*

***Novelty.*** *The researched algorithm is simple from the computational point of view, which makes it attractive for use in PRP processors. The researched algorithm partly reproduces the brightness histogram of the half-tone image block. During the background processing with constant brightness, the studied algorithm has errors, typical for the binarization process (e.g. noise as single bright pixels).*

***Practical significance.*** *The results of the researched algorithm are coordinated with visual perception and suggest the possible scope of the algorithm in a raster image PRP processor. The researched algorithm transfers the details and low contrast structures better than others for low and high contrast images with smooth change in brightness of the object, for images with low contrast background structure and for images with fine details.*