

Title **Process for independent pore networks obtaining in semiconductor wafers**
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Patent no. **Patent application No. a 2022 0001 from 24.01.2022**

The invention relates to the technology for the production of nanostructured materials, in particular to processes for obtaining of semiconductor nanostructures by electrochemical etching, which can be used in microfluidics and micro-electro-mechanical systems (MEMS).

The method, according to the invention, consists in anodization of the surface of a semiconductor wafer covered with a mask, with dimensions larger than $20 \times 20 \mu\text{m}^2$ and contains holes smaller than $2 \mu\text{m}$.

As a result of the anodization, two pore networks were produced, as illustrated in Figure (right side): (i) a network of primary pores, which propagate under the mask in a direction parallel to the surface of the sample and perpendicular to the edge of the mask; (ii) a network of secondary pores, which initially propagate in the hole of the mask in radial directions and subsequently change their direction of propagation in the direction of the primary pores. Thus, two networks of pores are produced located in the same region of the semiconductor wafer, which are independent of each other, the entrance to the primary pores being located in the region of the semiconductor wafer near the edge of the mask, as illustrated in Figure (left side), and the entrance to the secondary pores is in the hole projected in the mask.

Description
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The advantages of the proposed process over other existing processes are the possibility of obtaining several independent pore networks in the same region of the semiconductor wafer, using accessible equipment and cost-

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effective technologies.

This work received partial funding from the PostDoc Grant #21.00208.5007.15/PD and state program Grant #20.80009.5007.20.

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