Design technique of manufacturing process of porous material products with desired properties

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Metallic porous materials are notable for various types of structure-forming elements and processes of their manufacture. The technology created for manufacturing products with desired properties is based on the phenomenon of technological heredity. The principle of modeling the porous structures lies in the fact that a complex real object is replaced by a geometric model, available for mathematical modeling. We give a block scheme of design technique of manufacturing processes of stamp-welded porous material products with desired properties. The developed method was implemented when creating filters with frameless spherical filtering elements made of porous mesh materials for the purification of liquids and gases from mechanical impurities. The paper gives the test bench results of manufactured stamp-welded filters that provide the required fineness of purification at a maximum filtration area and specified flow rate characteristics of the medium being filtered.

Keywords: *metal porous mesh materials, woven wire mesh, manufacturing process design, technological heredity, porous structure modeling, stamp-welded product, filter, filtering elements, nominal fineness of purification*

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