The problem of filtration in the conditions of suspended contact mass appears not only in the process of water purification, but also in other spheres of human activity.

New theory on foreign particle motion inside suspended floc layer is observed (only their upward motion). The influence of horizontal limit of the suspended floc layer on foreign particle motion is considered. The co-authors present equations for calculating new space coordinates of a foreign particle.

Therefore, the authors form mathematical model of the water purifying filter reactor functioning, which can be used in the process of studying the peculiarities of filtration and in prospect can be taken as the basis for experiment planning. Further specification of this model may be made in case of developing the method of calculating the free path length in space case.

Key words: filtration, suspended floc layer, contact mass, mathematical model.

References


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