THE RESEARCHING OF TIRRADIANCE FLAT LAYERS OF LIQUID MEDIA IN A DOUBLE-SIDED INSTALLATIONS

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Annotation. *The analysis of the relative flat layers' exposure to environmental exposure of bilateral technological scheme that will improve the energy efficiency of liquid media exposure.*

Key words*: irradiation installation, ultraviolet radiation, bilateral irradiation*.

To create energy-ultraviolet irradiation of liquid media stream need to implement it to condition in which the radiation energy absorbed completely by irradiated volume environment. It is advisable to analyze the relative flat layers' exposure to environmental exposure of bilateral technological scheme, based on respect for the principle of uniformity of exposure.

The purpose of research - to determine the relative dependence exposure environment layers with different absorption coefficients for flowsheet bilateral irradiation.

Materials and methods of research. The paper used methods of optical analysis within the interaction of electromagnetic radiation with a liquid medium.

The results of research. Irregularity absorption caused by irradiation with a volume exponential dependence of intensity of penetrating radiation in the volume of penetration depth. In order to improve the uniformity of bulk absorption layer thickness regulating irradiated or channel section which moves irradiate liquid; carry selection system geometry emitters submersible type; using various mixing devices.

Described measures allow in practice to ensure high quality and uniformity of bulk radiation environment, however, the ability to compensate for attenuation of radiation in the environment is increasing its density by spatial reorganization of geometry beam. This opportunity will show through the analysis of the Helmholtz wave equation, which adopted a comprehensive index of refraction

The imaginary part of the refractive index determines the attenuation of radiation in the environment. Substituting the solution of this equation in the form of

permits, using the method of asymptotic approximation, receive ordinary differential equation

The resulting expression takes into account the optical properties of the medium and the geometry of the beam (decision of the functional equation l relatively frequent but given function, satisfying the restrictions on deflection I). The expression to determine the general principles of layout flowsheet surround exposure: spatial density on its way in the material should be formed so as to offset its weakening by absorption.

Flowsheet bilateral irradiation - the two plane internal surfaces radiate each other and have a rectangular cross section of a liquid layer between them

It was established that with increasing but uneven 'exposure in between the layers increases. For example, the tanning liquid medium in the technological scheme of the measure absorption not less than $1/0,75L$, for which irradiated layers varies within relatively small (20 %) can be achieved fairly uniform processing flow of ultraviolet radiation environment in depth. The proportion of flow passing through the layer of L, with a $= l/0,75L$ the order of 0.26 and with decreasing and increasing.

Conclusions

Tanning liquid medium in the technological scheme of the measure absorption not less than 1/0,75L, can achieve fairly uniform processing environment ultraviolet flux in depth.