индувидуального назначения, не требующие источников электрической энергии.

ЛИТЕРАТУРА

1. Онаркулов, К. Э., Нурдинова, Р. А., Юлдашев, Ш. А., & Юлдашев, А. А. (2022). Разработка теплопреобразователя на основе аномального фотовольтаического эффекта.
2. Egamberdievich, O. K., Abrorovich, Y. S., Abduvositovich, Y. A., & Qizi, Y. S. A. (2022). Determination of Microparameters of Halcogenide Thin Movies. *Journal of Optoelectronics Laser*, *41*(5), 523-530.
3. Onarkulov, K., Yuldashev, S., & Yuldashev, A. (2022). ФОТОМАГНИТНЫЙ ПРЕОБРАЗОВАТЕЛЬ. *Science and innovation*, *1*(A4), 47-51.
4. Yuldashev, S. (2022). ХАЛЬКОГЕНИД ЮПҚА ПАРДАЛАРИДА АФК-ЭФФЕКТ. *Science and innovation*, *1*(A6), 530-535.
5. Онаркулов, К., & Юлдашев, А. (2023). ГЕЛИООПТРОННЫЙ ИСТОЧНИК НАПРЯЖЕНИЯ. *Namangan davlat universiteti Ilmiy axborotnomasi*, (8), 30-34.
6. Yuldashev, A. (2022). OPTOTRANSFORMER. *Science and Innovation*, *1*(7), 876-882.
7. Юлдашев, Ш. А. (2023, November). ИССЛЕДОВАНИЕ ЭФФЕКТА АФН В НЕОДНОРОДНЫХ ТОНКИХ ПЛЕНКАХ. In *Fergana state university conference* (pp. 283-286).
8. Onarqulov, K., & Yuldasheva, S. (2023, November). XALKOGENID BIR JINSLI BO'LMAGAN YUPQA PARDALARIDA AFME–EFFEKTNI O'RGANISH. In *Fergana state university conference* (pp. 64-64).

LAYER AND BUILD RATE RELATIONSHIPS IN COTTON PROCESSING

G'.Rakhmatov, A.Keldibayev

Fergana State University, Fergana, Uzbekistan

g.r.raxmatov@pf.fdu.uz

Abstract: The efficiency of drying cotton with infrared (IR) rays as it moves along a conveyor belt depends on the exposure time t to the rays and the height of the cotton layer on the belt h. The longer the holding time t, the higher the drying efficiency and the lower the drying efficiency. The height h of the cotton layer on the belt negatively affects the drying efficiency, that is, if the height is high, the efficiency is low, and vice versa, it is high. Therefore, it is important to control the exposure time t and the height h of the cotton layer on the tape with a new drying method.

Keywords: cotton, tape, drying, infrared radiation, layer, efficiency, height, conveyor, movement.

In the proposed equipment, the time of cotton in the dryer can be controlled by

the speed of the belt. That is, if the speed is greater, the cotton stays in the dryer for less time, and if it is the opposite, it will be longer. This can be done by controlling the conveyor belt drive through an inverter. However, it is required to provide the required height of the cotton layer mechanically.

The cotton is moving without friction and the total amount of cotton entering and leaving the device is:

$$Q_{кир} = Q_{чик} \qquad (1)$$

Pile drum n smoothness flatten the cotton pad and tighten it. Part of the cotton lint is returned, and the rest goes to the drying zone in the drum zone [1].

We write the equation of the relative displacement of the cotton layers at the leveling point [2]:

$$\mu \frac{\partial^2 y}{\partial x^2} = \gamma \frac{\partial^2 y}{\partial t^2} \qquad (2)$$

Therefore, if the sign h does not count , it will be h am. Accordingly, the equation for the transfer capability q of the rectifier is as follows:

$$q_{ут} = \frac{0{,}5b\gamma h U_o^2}{(U_o + U_ю)} \qquad (3)$$

The ability to repeat

$$q_{кайт} = \frac{0{,}5b\gamma h U_ю^2}{(U_o + U_ю)} \qquad (4)$$

Now, we will analyze the performance of the dryer based on the belt conveyor throughput during the changeover period. The results are presented in table 1.

1-table

Effect of belt speed and layer height on productivity

№	$v_л$	*h*	*У*
1	*0.1* *0.2*	*0.1/0.2/0.3/0.4* *0.2/0.4* *0.3*	*0.153/0.306/0.459/0.612* *0.200/0.400/0.500/0.700* *0.450/0.550*

2	*0.5* *0.6*	*0.1/0.2/0.3/0.4* *0.3/0.4* *0.35*	*0.765/1.53/2.295/3.06* *0.800/2.58/3.100/3.56* *2.78/3.150*

When drying cotton raw materials in a layer under the influence of infrared radiation based on functional ceramics, it is necessary to determine the drying mode, that is, the time required to dry the material's moisture to the specified moisture level, which depends on the height of the cotton raw material layer [3].

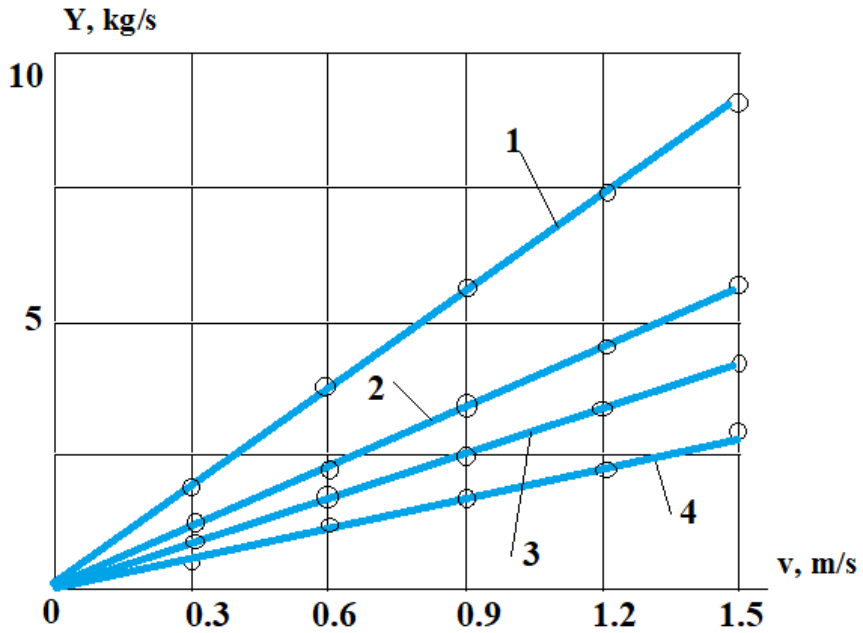

Figure 1. Effect of Belt Speed on Dryer Performance

Based on the above, there was a need to conduct research to determine the mode of drying cotton raw materials in different layers under the influence of infrared radiation based on functional ceramics.

References

1. Abdul-Malik Kayumov, Gulomjon Rakhmatov Technology of cotton layer leveling in the infrared drying device. *AIP Conf. Proc.* 3045, 030029 (2024) https://doi.org/10.1063/5.0197619. Research article/march 11 2024.

2. Gulomjon Rakhmatov, Abdul-Malik Kayumov Analysis of process intensity and quality indicators of cotton drying using infrared radiation. *AIP Conf. Proc.* 3045, 030030 (2024)

https://doi.org/10.1063/5.0197620. Research article/march 11 2024.

3. Abdul-Malik Kayumov, Boxodir Eshmatov, Gulomjon Rakhmatov Analysis of changes in cotton moisture under the influence of infrared (IR) radiation. *BIO Web of Conferences 93, 02013 (2024).* https://doi.org/10.1051/bioconf/20249302013. Forestry Forum 2023.