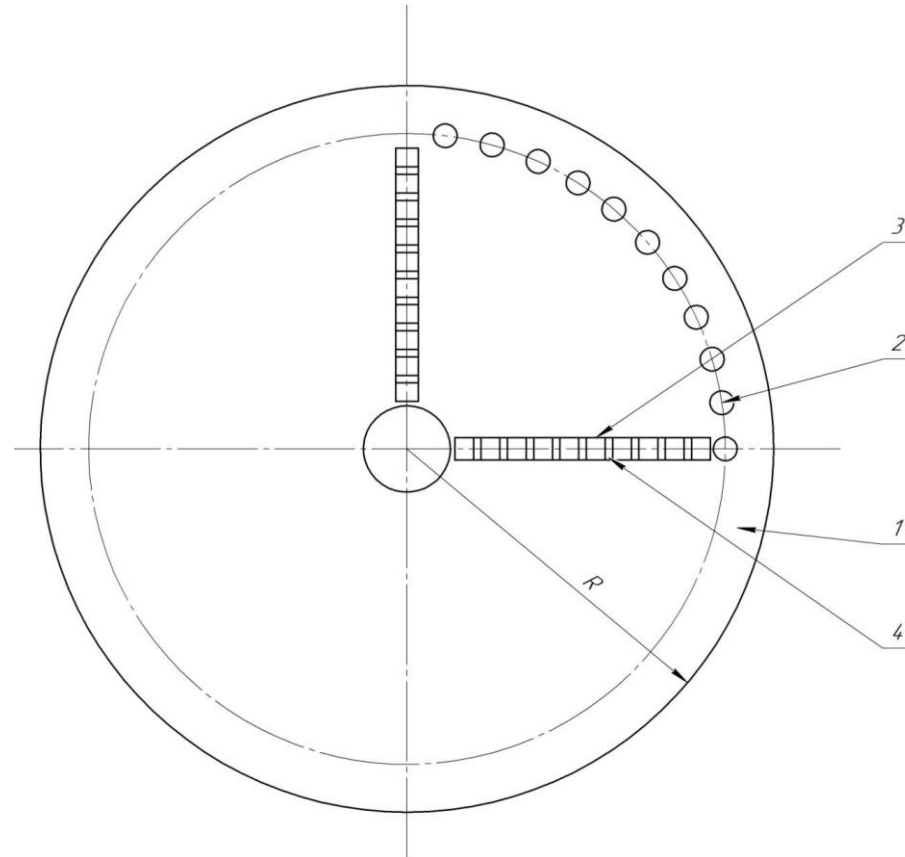


Modified rotor-disc mixer

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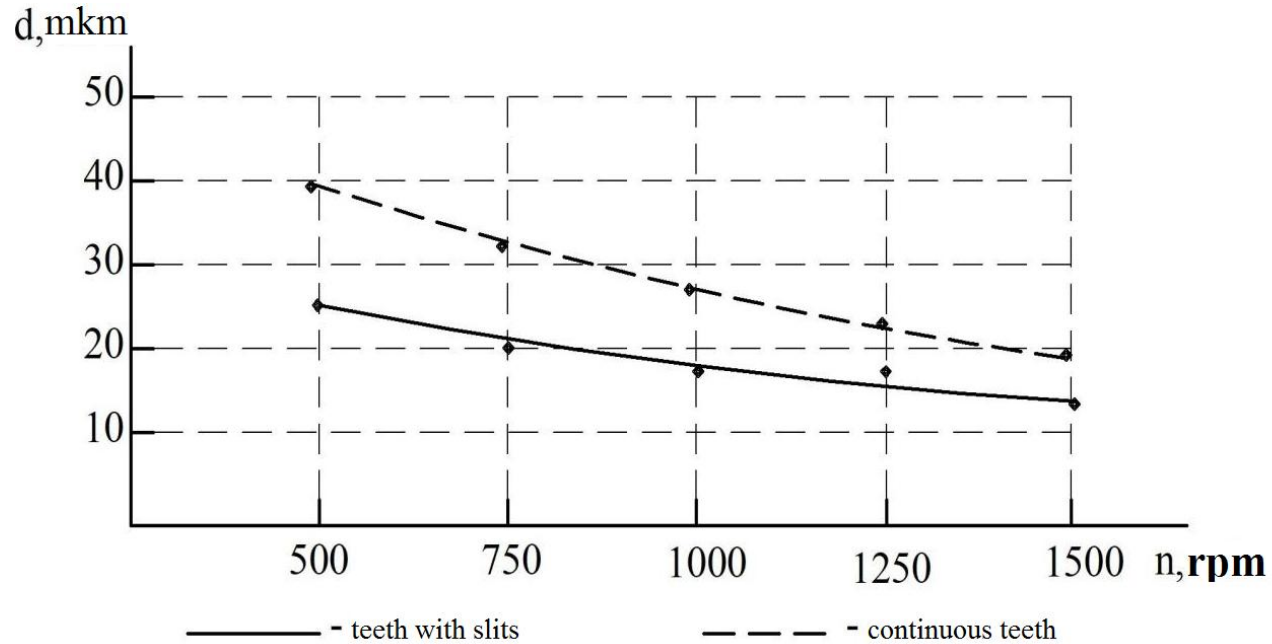
2020

Disc with modified additional working elements



1 - disc surface; 2 - through hole; 3 - additional working body (tooth); 4 – slits.

Relations of averaged size of dispersed particles on speed of rotor rotation for disk with solid additional elements and elements, which have transverse slots



Summary

There is given view of construction of one-step rotor-disc mixer and described work principle in this Thesis. Also given a view of additional elements construction, arranged on working bodies (discs). It is proved experimentally, that making of slots on additional work bodies (teeth) in comparison with solid additional working elements results to significant increase quality of the mixture and performance of the device. It is determined, that to create of the emulsion with certain of dispersed particles the apparatus with modified additional working elements consumes less specific power, this is due to the fact that the working medium passes through the slots, thereby creating additional highly turbulent flows, the directions of which intersect, creating zones of sharp increase and decrease in pressure, which has a positive effect on the emulsification process. In addition specific power consumption of the device with modified additional elements is less than the specific power of the device with solid additional elements, what indicates more highly energy efficiency of supposed construction of rotor-disc mixer. Also given results of experimental research, which certifies theoretical view fully.