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In Centrifugal-Vibration Concentrators Gravitational Enrichment

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Annotation: Centrifugal-vibration concentrators represent a vital tool in the field of mineral processing and ore beneficiation. This article delves into the fundamental concept of "gravitational enrichment" within these concentrators, exploring the underlying principles, operational parameters, and its significance in improving the efficiency of mineral separation. We discuss the essential keywords related to this topic and provide insights into the potential applications and future developments in this field.

Keywords: Centrifugal-vibration concentrators, gravitational enrichment, mineral processing, ore beneficiation, separation efficiency, operational parameters.

In order to study the possibilities and effectiveness of man-made waste enrichment using gravity enrichment methods, it was enriched in TsVK-100-2M centrifugal-vibration concentrators. Experiments were conducted in order to study the dependence of the size of the sample on the separation efficiency and enrichment level of precious metals. Experiments were conducted in three size classes: -1+0 mm; -0.5+0 mm; -0.315+0mm. Weight of each sample 1 kg. Before the experiment, the sample was soaked in water for 30-40 minutes, the ratio of solid particles to water was Q:S = 1:2. Samples were delivered to centrifugal-vibration concentrators in portions of 20-25 grams per minute. As a result of each experiment, enrichment, intermediate products and waste were obtained. The results of enrichment experiments of AGMK MOF waste in centrifugal-vibration concentrators are presented in Table 3.10.

Table-1. Results of enrichment experiments of AGMK MOF waste in centrifugal-vibration concentrators

The initial sample size, mm	Enrichment fraction	Product output, %	Quantity, g/t						Separation, %					
			Fe, %	Cu	Mo	Re	Al_2O_3,%	Au	Fe	Cu	Mo	Re	Al_2O_3	Au
Initial sample	Heavy	10,2	8,8	1425	2,8	0,013	14,1	0,286	16,0	10,0	2,0	0,7	15,2	13,7
	Light	89,8	5,3	1454	15,5	0,207	8,9	0,205	84,0	90,0	98,0	99,3	84,8	86,3
	Initially that	100,0	5,6	1451	14,2	0,187	9,5	0,213	100	100	100	100	100	100
-1+0	Heavy	20,6	7,7	1521	17,1	0,162	9,1	0,307	29,1	20,8	23,7	21,3	21,3	24,7
	Light	79,4	4,9	1510	14,3	0,156	8,7	0,243	70,9	79,2	76,3	78,7	78,7	75,3
	Initially that	100,0	5,5	1512	14,9	0,157	8,8	0,256	100	100	100	100	100	100
-0,5+0	Heavy	20,2	6,7	1490	19,2	0,195	10,1	0,319	26,4	19,1	24,1	29,7	21,4	24,2
	Light	79,8	4,8	1595	15,3	0,117	9,3	0,253	73,6	80,9	75,9	70,3	78,6	75,8
	Initially	100,0	5,2	1574	16,1	0,133	9,5	0,266	100	100	100	100	100	100

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	that													
-0,315+0	Heavy	22,2	7,5	1663	17,5	0,078	9,4	0,381	32,8	24,9	25,9	19,9	36,2	27,4
	Light	77,8	4,4	1434	14,3	0,090	4,7	0,288	67,2	75,1	74,1	80,1	63,8	72,6
	Initially that	100,0	5,1	1485	15,0	0,087	5,7	0,309	100	100	100	100	100	100

As can be seen from table 1, as a result of portioning of the sample, the output of AGMK MOF waste increased and made 10.2-22.2%. In this case, an insignificant change of iron compared to the initial sample was observed in the enrichment of the heavy fraction by size classes. The amount of iron in AGMK MOF waste increased from 5.1-5.6% to 5.7-8.8%. The separation of iron into the heavy fraction was 16.0-32.8%.

The concentration of copper, molybdenum, gold, rhenium and alumina in the heavy fraction enrichment products of AGMK MOF waste does not change, and their content in the enrichment products remains practically the same. Therefore, the separation of components corresponds to the release of enrichment products.

It should be noted that separation of these components from AGMK MOf waste does not occur. Therefore, it cannot be considered effective to use the gravity enrichment method in a centrifugal-vibration concentrator for the enrichment of AGMK MOF waste.

REFERENCES:

1. Абдусамиева Л. МИС БОЙИТИШ ФАБРИКАЛАРИ ЧИҚИНДИЛАРИДАН ҚИММАТБАХО КОМПОНЕНТЛАРНИ ГРАВИТАЦИЯ УСУЛИДА АЖРАТИБ ОЛИШ ТЕХНОЛОГИЯСИ //Eurasian Journal of Academic Research. – 2022. – Т. 2. – №. 12. – С. 464-470.
2. Abdusamiyeva L., Jo'rakulova S. COPPER MINING METHODS, SCHEMES AND REAGENT PROCEDURES //International Bulletin of Applied Science and Technology. – 2022. – Т. 2. – №. 11. – С. 233-238.
3. Abdusamiyeva L.N, Abdusamatov S.G., Xaqberdiyev S.B. Man-Made Waste Using Gravitation Methods Study Enrichment Processes. *INTERNATIONAL JOURNAL OF INCLUSIVE AND SUSTAINABLE EDUCATION*, *2*(2), 93–95. Retrieved from http://inter-publishing.com/index.php/IJISE/article/view/1071
4. Abdusamiyeva Lobarxon No'monjon qizi, Ortiqboyev Asilbek Oybek o'g'li. (2023). DISPOSAL OF MINING INDUSTRY WASTE (USE). INTERNATIONAL BULLETIN OF APPLIED SCIENCE AND TECHNOLOGY, 3(5), 576–580. https://doi.org/10.5281/zenodo.7947224