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X-RAY FLUORESCENT ANALYSIS OF PORTLAND CEMENT OBTAINED BASED ON FLOTATION WASTE OF "KONJIZA" CONCENTRATION FACTORY

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Introduction

One of the urgent problems of today is environmental pollution with industrial waste. A small part of industrial waste is processed, it is very important to use it in other areas [1]. Artificial stone based on Portland cement is one of the most important building materials, but the high risk of discoloration over time limits its use [2]. Metakaolin, nano-SiO_2 and basalt powder were used in this work as inhibitory mineral additives in Portland cement stone to prevent tarnishing. The opacification of cement stone has been studied in terms of hydration products and pore structure [3]. Both the morphology and phase assembly of the fading substance were studied at different scales using optical microscopy, laser confocal novel spectroscopy, and SEM [4]. The results show that the addition of nano- SiO2 and metakaolin can effectively slow cement stone fading as an inhibitor due to the consumption of $Ca(OH)_2$ during cement hydration and the reduction of total porosity [5]. On the contrary, nano-SiO_2 with high reactivity and specific surface area has the least number of macropores and total porosity, the lowest capillary absorption coefficient and the best resistance to tarnish along with portlandite content [6].

X-ray fluorescence analysis of portland cement obtained on the basis of flotation waste of "Khonjiza" concentrator. The analyzes were carried out on the EDX-8100 instrument. Rh element was used as a source of radioactive radiation in the analyses. In the course of research, it was carried out in the atmosphere of atmospheric air, in the time interval from 10 to 30 seconds. The first stage was carried out between Al-U metals, the second stage was carried out between Rh-Cd metals, the third stage was carried out between C-Sc elements https://t.me/c/1424188715/72975 Analysis time of one sample 50 kV electric voltage and 321 A current to Al-U analytes for 10 minutes, Rh-Cd; 15 kV voltage

and 1000 A current were used for analytes, and 50 kV voltage and 453 A current were used for C-Sc analytes (Fig. 1).

Quantitative Result

Analyte	Result	[3-sigma]	Proc.-Calc.	Line	Int.(cps/uA)
SiO2	68.316 %	[1.020]	Quan-FP	SiKa	19.0405
Al2O3	17.727 %	[2.034]	Quan-FP	AlKa	1.3539
SO3	7.537 %	[0.119]	Quan-FP	S Ka	11.4373
Fe2O3	3.272 %	[0.009]	Quan-FP	FeKa	633.4339
K2O	1.490 %	[0.023]	Quan-FP	K Ka	16.6396
CaO	1.010 %	[0.015]	Quan-FP	CaKa	18.6686
ZnO	0.353 %	[0.002]	Quan-FP	ZnKa	161.4716
TiO2	0.139 %	[0.003]	Quan-FP	TiKa	5.6467
PbO	0.062 %	[0.002]	Quan-FP	PbLb1	23.4152
CuO	0.029 %	[0.000]	Quan-FP	CuKa	11.0382
MnO	0.027 %	[0.002]	Quan-FP	MnKa	4.1927
V2O5	0.011 %	[0.003]	Quan-FP	V Ka	0.6049
ZrO2	0.010 %	[0.000]	Quan-FP	ZrKa	11.7797
Ac	0.009 %	[0.001]	Quan-FP	AcLa	4.8013
Ir2O3	0.004 %	[0.002]	Quan-FP	IrLa	0.9453
SrO	0.004 %	[0.000]	Quan-FP	SrKa	4.5954

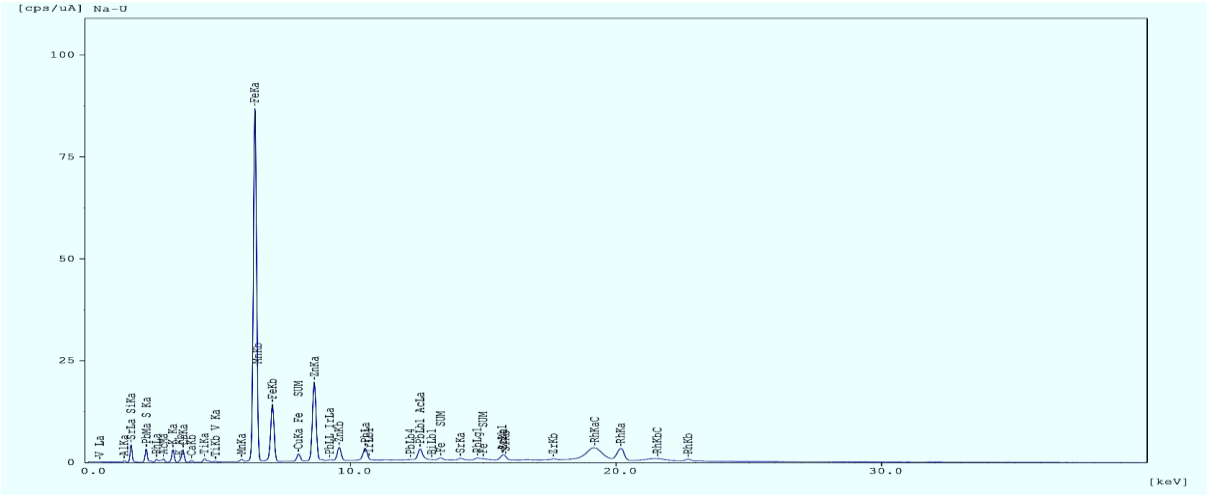

Fig.1. X-ray fluorescence analysis of portland cement obtained on the basis of flotation waste of "Khonjiza" concentrator.

It can be seen from the results of X-ray fluorescence analysis of the portland cement obtained on the basis of flotation waste of "Khonjiza" enrichment plant that the initial substances have fully reacted.

REFERENCES

1. Хамзаев Н.Ж., Тураев Х.Х., Эшмуродов Х.Э. Перспективы использования железной руды «Чуянкон» в цементной промышленности // Universum: технические науки : электрон. научн. журн. 2022. 9(102). URL: https://7universum.com/ru/tech/archive/item/14232

2. Нормуродова Х.Х., Тураев Х.Х., Хамзаев Н.Ж., Аликулов Р.В., Эшмуродов Х.Э. Изучение состава и свойств минералов гранит и габбро месторождение «Чуякон» и получение водно-дисперсионных красок для стен на их основе // Universum: технические науки : электрон. научн. журн. 2023. 5(110). URL: https://7universum.com/ru/tech/archive/item/15579

3. N.J. Xamzayev, X.X. Turayev, A.S. Mukimov. “XANDIZA” qayta ishlash zavodining flotatsiya chiqindisi qo‘shilgan sementning mexanik xususiyatlarini o‘rganish. Kompozitsion materiallar. Ilmiy-texnikaviy va amaliy jurnali. ISSN: 2091-5527. № 2/2023.

4. Хамзаев Н.Ж., Тураев Х.Х., Эшмуродов Х.Э. Исследование влияния гранитных добавок на свойства цемента // Universum: технические науки : электрон. научн. журн. 2022. 9(102). URL: https://7universum.com/ru/tech/archive/item/14233

5. Хамзаев Н., Тураев Х., Эшмуродов Х. Перспективы использования отходов флотации фабрики «Хандиза» в цементной промышленности // Ўзбекистон Миллий Университети хабарлари. 2023. 3/1/1.