

Article

Modern Technologies Providing a Full Cycle of Geo-Resources Development

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Supplementary Materials

Table S1. Content of valuable components in tailing dumps of the Southern Urals [33].

Tailing Dumps of the Ore Processing Plants	Element Content					
	Copper	Zinc	Sulfur	Iron	Gold	Silver
		%			g/t	
Sibay	0,21	0,50	22,7	32,7	0,85	18,5
Uchaly	0,22	0,63	23,1	29,5	0,6	8,5
Buribay	0,45	0,21	25,6	23,1	1,2	10,3
Guy	0,3	0,23	26,6	13,9	0,7	4,0

Table S2. Chemical composition (in %) of metallurgical slags [34].

№	Metallurgical Plants	SiO ₂	Al ₂ O ₃	CaO	MgO	S	SO ₃	MnO	Fe ₂ O ₃	FeO	etc.
1	Chusovskoy	31,1	10,2	50,6	4,3	1,4	0,2	-	-	-	2,2
2	Orsk-Khalilovo	34,5	8,5	47,2	3,1	-	2,9	2,3	1,4	1,9	0,5
3	Chelyabinsk	39,6	9,3	41,0	6,9	0,1	0,5	0,4	-	-	2,2
4	Mednogorsk	37,0	12,1	35,4	8,9	1,6	1,8	0,6	-	-	2,6
5	Cherepovetsk	30,9	11,1	41,9	11,4	0,7	1,1	-	0,5	0,6	1,8
6	West Siberian	33,7	17,1	27,5	15,7	2,3	-	1,2	0,9	-	1,6
7	Nizhniy Tagil	35,3	16,8	38,0	5,8	1,1	-	0,7	0,9	-	1,4
8	Novolipetsk	33,6	17,4	40,0	5,9	1,7	-	0,9	-	0,4	0,1
9	Nizhniy Tagil ¹	30,9	19,0	29,9	9,7	0,5	-	0,4	0,7	-	9,9

¹ Vanadium redistribution.

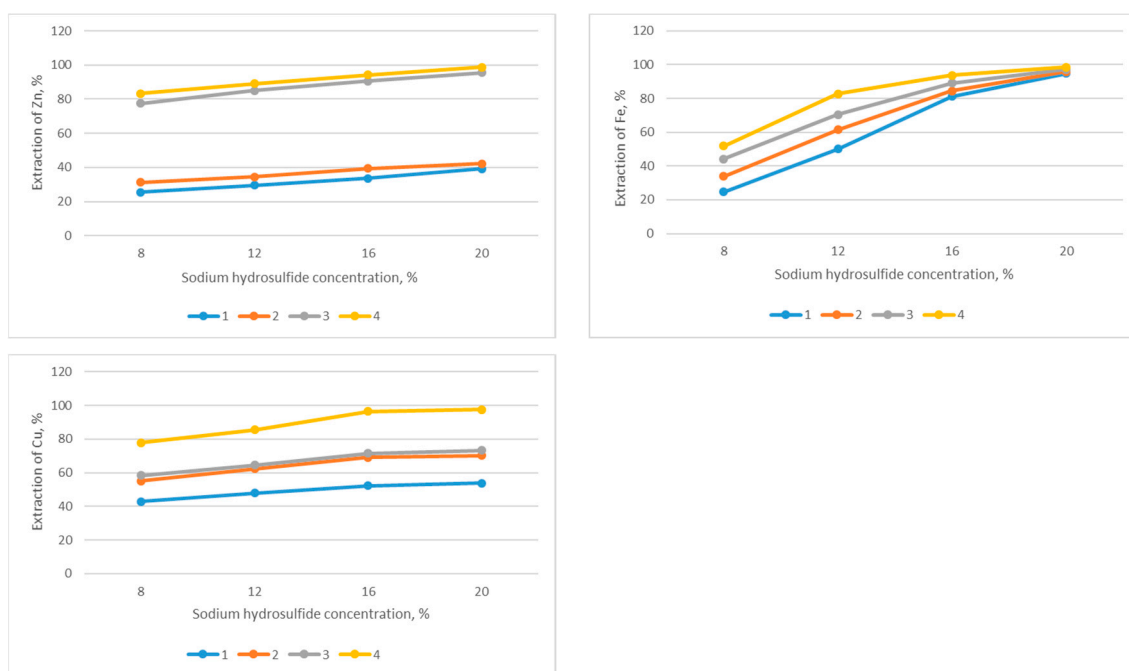


Figure S1. Dependence of the metals extraction from the concentration tailings on the concentration of sodium hydrosulfide in the work solution and on the activation method.

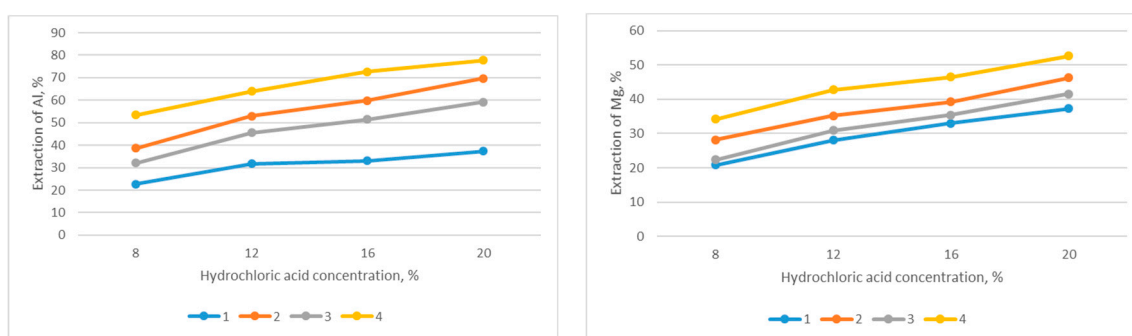


Figure S2. Dependence of metal extraction from metallurgical slags on the concentration of hydrochloric acid in the work solution and on the activation method.

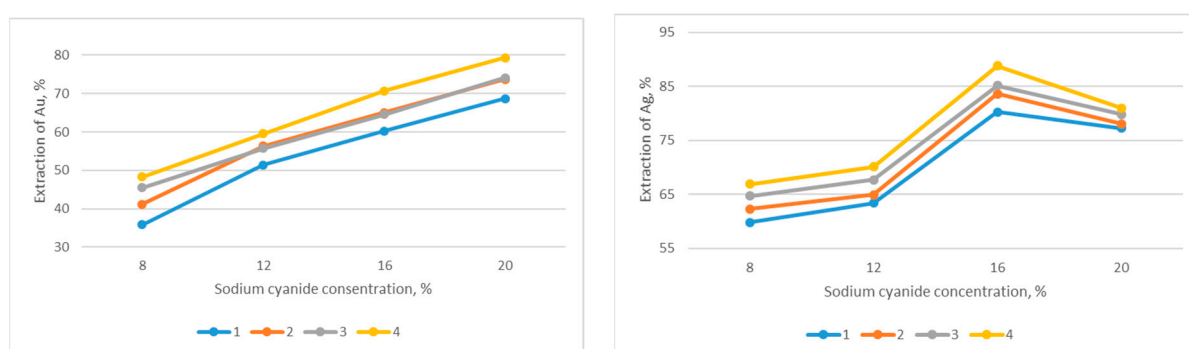


Figure S3. Dependence of the metal extraction from concentration tailings on the concentration of sodium cyanide in the work solution and on the activation method.