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Physico-chemical basics for production of uranium concentrate from wastes of hydrometallurgical plants and technical waters

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Physico-chemical and technological basics for reprocessing of uranium industry wastes of Northern Tajikistan shows that the most perspective for reprocessing is Chkalovkst tailing's wastes.
Engineer and geological condition and content of radionuclides in wastes are investigated.
It is determined that considered wastes by radioactivity are low-active and they can be reprocessed with the purpose of U3O8 production.
Characteristics of mine and technical waters of uranium industry wastes are studied. Characteristics of mine and technical waters of Kiik-Tal and Istiklol city (former Taboshar) showed the expediency of uranium oxide extraction from them
The reasons for non-additional recovery extraction from dumps of SE "Vostokredmet"by classical methods of uranium leaching are studied.
Kinetics of sulfuric leaching of residues from anthropogenic deposit of Map 1-9 (Chkalovsk city) is investigated.
Carried out investigations are revealing the flow mechanism process of residues'sulfuric leaching and enable selection of radiation regime of U3O8 production.
Kinetics of sorption process of uranium extraction from mine and technical waters of uranium industry wastes is studied. High sorption properties of apricot's shell comparing to other sorbents are revealed.
Basic process flow diagram for reprocessing of uranium tailing wastes is developed as well as diagram for uranium extraction from mine and technical waters from uranium industry wastes which consists of the following stages: acidification, sorption, burning, leaching, sedimentation, filtration, drying.
The possibility of uranium extraction from natural uranic waters of complicated salt composition is considered. Investigations revealed that uranium extraction from brines containing ion-chlorine is possible.
Developed uranium extraction diagram from Sasik-Kul lake's brine consist from the following main stages: evaporation, leaching, ion-chlorine deletion, sorption, desorption, sedimentation, drying, tempering.
Thus, technological basics of uranium industry wastes reprocessing in Tajikistan are presented. Information about tailings of former uranium industry in the North of Tajikistan in provided. Issues of waste safe management of mining and reprocessing, uranium ores are considered. Types of uranium revealing in wastes and drainage waters are described.
Besides, possibility of local material use –apricot's shell as sorbent for uranium extraction from run-off mine and technical waters of mining and milling enterprises is shown

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