# Uranium resources and extraction: critical review

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## Abstract

Uranium deposits are widespread throughout the sediments rocks in central part of Jordan. Uranium contents are not the same in each locality. The average thickness of the radioactive zone (Host Rock) ranges between 0.5-5m. Uranium distribution is inhomogeneous and follows porous weakness zones of chalk marl/travertine and caliche/top soil deposits. The source of uranium and other redox sensitive metals Cr, Ni, V, Zn, and Zr is the combusted bituminous marl (varicolored marble).

The increase demand for reducing production costs, depletion of high grade deposits, and fulfillment of strict environmental constrains lead to the development of new technologies to extract uranium($U_3O_8$) from its conventional and unconventional resources.Technologies have been developed to concentrate low grade surficial deposits with carbonates and clay gangue, uranium in sandstone ores, uranium associated with carbonaceous shale, and uranium in saline leach solutions and phosphoric acid .

In this work, a critical review of these technologies over the world will be presented by comparing their advantages and limitations, aiming at choosing the best technology suitable for Jordanian uranium deposits.

**Key words: uranium ore, uranium extraction, solvent extraction**