

International Symposium on Uranium Raw Material for the Nuclear Fuel
Cycle: Exploration, Mining, Production, Supply and Demand, Economics and
Environmental Issues - IAEA CN-216

Contribution ID: 35

Type: **Oral**

Thorium and uranium separation from Rare Earth complex minerals in Turkey

Thursday, 26 June 2014 11:10 (25 minutes)

In the southern part of Turkey there is a complex minerals deposit which contains rare earth elements (REEs), Ti, Zr, U and thorium. Physical beneficiation operations and hydrometallurgical processes allow to the separation of U along with Zr and Ti. The obtained [REEs and Th] oxalate concentrate is submitted to metathesis in order to convert oxalates to their respective hydroxides. The hydroxides cake is dissolved in acid and thorium is separated firstly by pH regulation, then peroxide precipitation is applied for the final purification of thorium.

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Session Classification: Thorium and rare-earth element-associated resources

Track Classification: Thorium and rare-earth element (REE)-associated resources