Extraction and Applications of Rare Earth Metals and Alloys (Uranium, Lithium, Beryllium, Selenium, Platinum Metals, Tantalum, Silicon, Molybdenum, Manganese, Chromium, Cadmium, Boron, Titanium, Tungsten, Zirconium)

Description:

Metals &Alloys is a primary source of the lanthanide rare earth metals (includingyttrium and scandium) and of rare earth metal alloys. The oxides produced fromprocessing rare earths are collectively referred to as rare earth oxides.Although rare earths are relatively common in the earth's crust, they often donot occur in high enough concentrations, or occur along with high levels ofradioactive elements to make their extraction economic. The oxides that areproduced from processing the rare earth elements constitute the basic materialthat can be sold to the market or further processed into metals or alloys.

Rare earthmetals and alloys that contain them are used in many devices that people useevery day such as computer memory, DVDs, rechargeable batteries, cell phones,catalytic converters, magnets, fluorescent lighting and much more.

Rare earths areessential constituents of more than 100 mineral species and present in manymore through substitution. They have a marked geochemical affinity for calcium,titanium, niobium, zirconium, fluoride, phosphate and carbonate ions.Industrially important minerals, which are utilized at present for rare earthsproduction, are essentially three, namely monazite, bastnasite and xenotime. Inmodern time techniques for exploration of rare earths and yttrium mineralsinclude geologic identification of environments of deposition and surface aswell as airborne reconnaissance with magneto metric and radiometric equipment.There are numerous applications of rare earths such as in glass makingindustry, cracking catalysts, electronic and optoelectronic devices, medicaltechnology, nuclear technology, agriculture, plastic industry etc. Lot ofmetals and alloys called rare earth are lying in the earth which required to beprocessed. Some of the important elements extracted from rare earths areuranium, lithium, beryllium, selenium, platinum metals, tantalum, silicon,molybdenum, manganese, chromium, cadmium, titanium, tungsten, zirconium etc.There are different methods involved in production of metals and non metalsfrom rare earths for example; separation, primary crushing, secondary crushing,wet grinding, dry grinding etc.

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Keywords: Rare Earth Metals and Alloys, Uranium, Lithium, Beryllium, Selenium, Platinum Metals, Tantalum, Silicon, Molybdenum, Manganese, Chromium, Cadmium, Boron, Titanium, Tungsten, Zirconium, Applications of Rare Earth Metals and Alloys, Extraction of Rare Earth Metals and Alloys, Rare Earth elements, Rare Earth Metals, Rare Earth Alloys, properties of Rare Earth Metals and Alloys, preparation of Rare Earth Metals and Alloys

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