

Procedures of Titanium Recovery from Residual Materials Resulted in Industrial Processing of Materials with High Content of Titanium

PhD Thesis Abstract

Author: Laura Eugenia MOLDOVEANU (BĂRBULESCU)

PhD Advisor: Prof. Cristian Valeriu PÎRVU

This thesis aims to reuse some waste from Romanian industry, from a factory producing titanium ingots. (Zirom SA Giurgiu).

Due to obtaining and processing procedures of titanium ingots result a type of titanium scrap (provided from the ingots surface) which can not be returned into technological process because impurities improperly content.

This work brings new directions to reuse this waste, like this: rare and relatively rare earth recovery using as retention bed titanium scrap: titanium scrap utilization for some pollutant degradation such as phenol degradation and titanium scrap usage for its antibacterial behaviour.

Another secondary product (waste) resulted due to titanium ingots processing by forging is a dust material mixed with an abrasive material (resulted due grinding and shot blasting process applied to titanium forging products.) This waste have important contents of titanium and iron.

The aime of this work is to identify an efficient way to reuse this dust resulted from titanium ingots forging process. This waste was integrated in construction materials by partial replacing of aggregate used for motars as basis in Portland cements.