

Programme & The Book of Abstracts

Twenty-first Annual Conference

YUCOMAT 2019

&

Eleventh World Round Table Conference

on Sintering –

Science of Sintering & Its Future: Fifty Years Later

WRTCS 2019

Herceg Novi, Montenegro September 2 - 6, 2019

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&
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A novel type of building material derived from the by-products of steel making industry

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Electric arc furnace slag (EAFS) and electric arc furnace dust (EAFD) are the waste materials generated during the iron and steel scrap remelting in electric arc furnace. EAFS is non-hazardous material which has found its application in different field of civil engineering. On the other hand, EAFD is classified as hazardous materials due to the presence of heavy metals (Zn, Pb, Cu Cr and Cd) and their potential leaching into environment.

Stabilization/solidification (S/S) of toxic waste is a widely investigated as simply method for production of stable product. Cement binder was mainly used for this purpose but important shift in the use of different waste materials as a cement replacement was observed.

The aim of this study was to investigate the possibility of S/S of heavy metals from EAFD using the alkali activated binders based on EAFS. The alkali activated slag with a different content of EAFS was synthesised and characterized using the SEM/EDS, XRD, FTIR. The binding of Zn into the reaction product of slag alkali activation was founded. The immobilization efficacy was evaluated using TCLP Method No. 1311 (USEPA) and EN 12457-2 (EULFD) leaching tests.

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