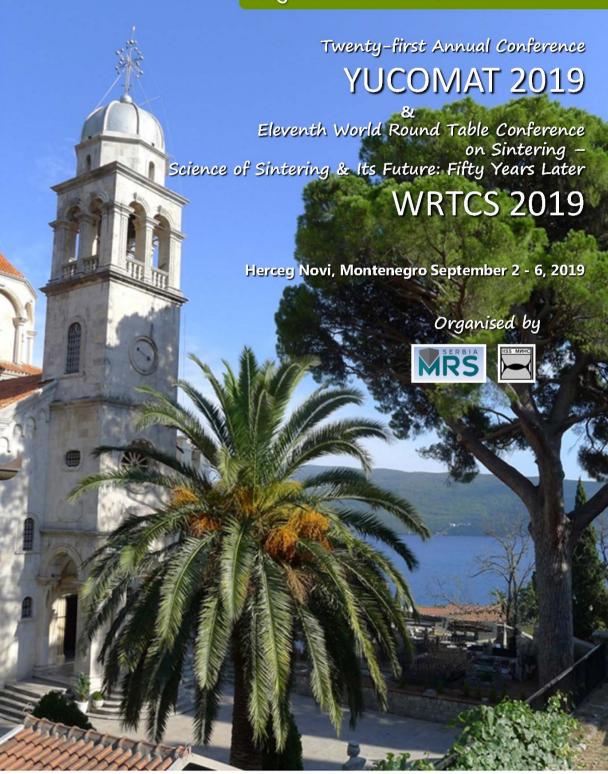
Programme & The Book of Abstracts

















Twenty-first Annual Conference YUCOMAT 2019

&

Eleventh World Round Table Conference on Sintering

WRTCS 2019

Programme and The Book of Abstracts

Organised by:

Materials Research Society of Serbia

&
International Institute for the Science of Sintering

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Eleventh World Round Table Conference on Sintering

WRTCS 2019

Programme and The Book of Abstracts

Publisher: Materials Research Society of Serbia

Knez Mihailova 35/IV, P.O.Box 433, 11000 Belgrade,

Serbia

http://www.mrs-serbia.org.rs

Editors: Prof. Dr. Dragan P. Uskoković and Prof. Dr. Velimir R.

Radmilović

Technical editors: Maja Jovanović and Jasmina Jevtić

Cover page: Nenad L. Ignjatović

Front cover: Image is the property of MRS Serbia

Back cover: Modified Photo by Vlada Marinković; Wikimedia Commons

(https://commons.wikimedia.org/wiki/File:Belgrade iz balona.jpg); CC BY-SA 3.0

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Science of Sintering



Printed in: Biro Konto

Sutorina bb, Igalo – Herceg Novi, Montenegro

Phones: +382-31-670123, 670025, E-mail: bkonto@t-com.me. Circulation: 220 copies. The end of printing:

August 2019

Twenty-first YUCOMAT 2019 & Eleventh WRTCS 2019

Herceg Novi, September 2 - 6, 2019

Y.O.S.V.6.

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, XRDP, 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.

CIP- Каталогизација у публикацији Народна библиотека Србије

66.017/.018(048) 621.762.5(048)

DRUŠTVO za istraživanje materijala Srbije (Beograd). Godišnja konferencija (21; 2019; Herceg Novi)

Programme; and The Book of abstracts / Twenty-first Annual Conference YUCOMAT 2019 & Eleventh World Round Table Conference on Sintering WRTCS 2019, Herceg Novi, Montenegro, September 2-6, 2019; organised by Materials Research Society of Serbia & International Institute for the Science of Sintering; [editors Dragan P. Uskoković and Velimir R. Radmilović]. - Belgrade: Materials Research Society of Serbia, 2019 (Herceg Novi: Biro Konto). - XLVIII, 174 str.: ilustr.; 23 cm

Tiraž 220. - Bibliografija uz pojedine apstrakte. - Registar.

ISBN 978-86-919111-4-0

- 1. World Round Table Conference on Sintering (11; 2019; Herceg Novi)
- а) Наука о материјалима -- Апстракти б) Технички материјали -- Апстракти в) Синтеровање -- Апстракти

COBISS.SR-ID 278510092