Programme & The Book of Abstracts

Nineteenth Annual Conference

YUCOMAT 2017

Herceg Novi, Montenegro, September 4-8, 2017

TT I ST ST

Organised by

MRS COMRS FEMS

MATERIALS RESEARCH SOCIETY OF SERBIA

endorsed by

NINETEENTH ANNUAL CONFERENCE

YUCOMAT 2017

Hunguest Hotel Sun Resort Herceg Novi, Montenegro, September 4-8, 2017 http://www.mrs-serbia.org.rs

Programme and The Book of Abstracts

Organised by: Materials Research Society of Serbia

Endorsed by: **Materials Research Society, European Materials Research Society** and **Federation of European Material Societies**

Title:	THE NINETEENTH ANNUAL CONFERENCE YUCOMAT 2017 Programme and The Book of Abstracts
Publisher:	Materials Research Society of Serbia Knez Mihailova 35/IV, P.O.Box 433, 11000 Belgrade, Serbia Phone: +381 11 2185-437 http://www.mrs-serbia.org.rs
Editors:	Prof. Dr. Dragan P. Uskoković and Prof. Dr. Velimir Radmilović

Technical editor: Aleksandra Stojičić

 Cover page:
 Aleksandra Stojičić and Milica Ševkušić

 Front cover:
 Modified Photo by Mercy; Wikimedia Commons

 (https://commons.wikimedia.org/wiki/Category:Herceg_Novi#/media/File:Herceg_Novi, Monten

 egro_-_harbour.jpg);
 CC BY-SA 3.0

 Back cover:
 Modified photo by Anatoly Alekseyevich Ivanishin, Exploration 30 ISS Mission,

 NASA;
 Wikimedia Commons

 (https://commons.wikimedia.org/wiki/File:Warp_Belgrade_Nightscene_April_2012spatial_subset_.jpg);
 Public domain

Copyright © 2017 Materials Research Society of Serbia

Acknowledgments: This conference is celebrating 20 years of MRS-Serbia.



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 2017

P.S.A.7.

Composition of red mud and/or metakaolin-based modified geopolymers

Mira Vukčević¹, Ivana Bošković¹, Snežana Nenadović², Miljana Mirković², Bojan Čalija³, Vladimir Pavlović⁴, and <u>Ljiljana Kljajević²</u>

¹Faculty of Metallurgy and Technology, University of Montenegro, ²Laboratory for Materials Sciences, Institute of Nuclear Sciences Vinča, University of Belgrade, Serbia, ³Department of Pharmaceutical Technology, Faculty of Pharmacy, University of Belgrade, Serbia, ⁴Institute of Technical Sciences of the Serbian Academy of Sciences and Arts, University of Belgrade, Serbia

There is potential use of red mud for synthesis of inorganic polymeric materials through a geopolymerization process as an alternative in the sectors of construction and building materials. By introducing of inorganic and organic modificators of microstructure (calcium hydroxide, bi-functional epoxy resins, or various types of alkoxylanes) during the geopolymer synthesis the enhanced values of ductility and strength can be obtained.

Research was performed on alumosilicate material (red mud and metakaolin) and alkali activator raw mixture with defined quantity of modificator. The best sinthesys conditions were identified. Post-synthesis curing also play important role in obtaining of good-performing geopolymers. Characteristics of geopolymers were defined by measuring of compressive strength, N2physisorption, as well as by SEM analysis, X-ray diffraction (XRD) and Fourier transform infrared spectroscopy (FTIR). In addition the lower value of zeta potential was identified as the assisting factor for the specific structure domains formation (within the certain range of pH) accompanied by the high compressive strength.

NINETEENTH ANNUAL CONFERENCE YUCOMAT 2017 Herceg Novi, September 4-8, 2017

CIP- Каталогизација у публикацији Народна библиотека Србије

66.017/.018(048)

MATERIALS Research Society (Beograd). Conference (19; 2017; Herceg Novi)

Programme ; and The Book of Abstracts / Nineteenth Annual Conference YUCOMAT 2017, Herceg Novi, September 4-8, 2017 ; organised by Materials Research Society of Serbia, [Belgrade ; editors Dragan P. Uskoković and Velimir Radmilović]. - Belgrade : Materials Research Society of Serbia, 2017 (Herceg Novi : Biro Konto). - XL, 124 str. ; 23 cm

Tiraž 220. - Registar.

ISBN 978-86-919111-2-6

1. Materials Research Society of Serbia (Beograd)

а) Наука о материјалима - Апстрактиb) Технички материјали - Апстракти

COBISS.SR-ID 241612044