

Serbian Ceramic Society Conference
ADVANCED CERAMICS AND APPLICATION IV
New Frontiers in Multifunctional Material Science and Processing

Serbian Ceramic Society
Institute for Testing of Materials
Institute of Chemistry Technology and Metallurgy
Institute for Technology of Nuclear and Other Raw Mineral Materials
School of Electrical Engineering and Computer Science of Applied Studies

PROGRAM AND THE BOOK OF ABSTRACTS

Serbian Academy of Sciences and Arts, Knez Mihailova 35
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¹Electronic Faculty of Niš,
²Technical High School, Niš.

- 17.25-17.40** **OR12 Lead-free piezoelectric ceramics selection by using MADM approach**
Dušan Petković¹, Miloš Madić¹, Goran Radenković¹
¹Faculty of Mechanical Engineering University of Niš
- 17. 40-17.55** **OR13 Impact of crushed mineral aggregate on the pumpability of concrete during transported and placement**
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- 17.55-18.10** **OR14 Integral characteristics of entropy and Planck's law of radiation**
Dejan R. Blagojević¹, Stanislav D. Veljković¹, Dimitrije Č. Stefanović²
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- 18.10-18.25** **OR15 Timacum Maius: Roman Bricks as a Significant Historical Source**
Vladimir P. Petrović¹, Vojislav Filipović²
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²Archaeological institute, Belgrade
- 18.25-19.30** **Coffee Break and Poster Session**

Hall, 1st floor

available piezoelectric materials are comprised of more than 60 weight percent lead. Due to lead harmful effects, lead-free piezoelectric materials are still being developed.

In order to find desired properties of the lead-free materials, wide range of compositions and fabrication techniques have been investigated. Taking into account that it is not possible to improve all desired properties simultaneously using one of the fabrication technique or compositional modification, this problem is studied under multiple attribute decision making (MADM) field. Namely, MADM methods are used to select the most suitable lead-free piezoelectric ceramics from the large number of alternatives for a set of selection criteria.

OR13

Impact of crushed mineral aggregate on the pumpability of concrete during transport and placement

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In the spirit of the sustainable buildings, and with the goal of protection of river courses, in the near future an already announced directive ordering closing down of a large number of river aggregate dredging operations will be adopted. For that reason, usage of crushed mineral aggregate in concrete mixes is increasing. Irrespective of downsides of the fined crushed mineral aggregate, such as the presence of fine particles bordering the upper permissible limit and the unfavorable shape of the grain of the coarse aggregate for obtaining liquid consistency required for the pumpable concrete, the demanded pumpability of concrete during transport and placement has been achieved.

By adding admixtures to concrete, the required concrete properties, such as: frost resistance, simultaneous frost and salt resistance and water tightness have been achieved.

OR14

Integral characteristics of entropy and Planck's law of radiation

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The accuracy of any theory of structural hierarchy of materijals¹ should be the final check on the law of radiation of black body^{2,3}, which is considered one of the best established laws of physics in general.

On the other hand, the most recent tendencies towards defining the system units through natural constants⁴ put this law in the foreground, bearing in mind that in him the Planck's constant is contained. This constant is considered one of the fundamental constants of the new system of units.