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

**Serbian Ceramic Society**
**Institute of Technical Sciences of SASA**
**Institute for Testing of Materials**
**Institute of Chemistry Technology and Metallurgy**
**Institute for Technology of Nuclear and Other Raw Mineral Materials**

# PROGRAM AND THE BOOK OF ABSTRACTS

**Serbian Academy of Sciences and Arts, Knez Mihailova 35**
**Serbia, Belgrade, 26-27th September 2022.**

**18.20 – 18.40** **INV The application possibilities of waste materials in concrete – the current state in Serbia**

Iva Despotović
Faculty of Mechanical and Civil Engineering in Kraljevo, University of Kragujevac, Serbia

**18.40 – 19.00** **INV Red mud utilisation: Hazardous waste or a valuable raw material**

Snežana Vučetić[1], Damir Čjepa[2], Bojan Miljević[1], Jonjaua Ranogajec[1]
[1]University of Novi Sad, Faculty of Technology Novi Sad, Bul. Cara Lazara 1, 21000 Novi Sad, Serbia,
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**19.00 – 19.15** **ORL Possibilities of usage hazardous waste slag in geopolymer mixtures**

Jelena Bijeljić[1], Nenad Ristić[2], Dejan Blagojević[1], Dušan Grdić[2]
[1]Academy of technical and educational vocational Studies Niš, Serbia
[2] Faculty of Civil Engineering and Architecture Niš, Niš, Serbia

**19.15 - 20.00** **Awards & Closing Ceremony** **Hall 2, 1st Floor**

## INV25

## The application possibilities of waste materials in concrete – the current state in Serbia

Iva Despotovic

Faculty of Mechanical and Civil Engineering in Kraljevo, University of Kragujevac, Serbia

The construction industry uses vast amounts of natural resources, simultaneously producing significant amounts of debris, which has a large impact on the environment. Annual production of concrete in the world has reached 14 billion $m^3$ which classifying it as the most widely used construction material. Regards to the fact that about 70% of concrete is actually an aggregate, it is clear how much of the quantities of natural and crushed aggregates is required. The uncontrolled exploitation of aggregates from rivers seriously disrupts aquatic ecosystems and habitats, while production of crushed natural aggregates increases emission of harmful gases, primarily $CO_2$, responsible for the greenhouse effect. These gases are produced during rock mining and also transportation of aggregates to the usually distant urban areas. Also, cement factories produce about 7% of global $CO_2$. On the other hand, the amount of construction waste generated during construction and demolition process, as well as the amount of industrial waste, are growing rapidly. The problem of waste disposal is usually resolved by established (which are occupying large areas and waste disposal is expensive) or "wild" - illegal dumps. If we used any of the industrial by – products, such as fly ash, silica fume, biomass, or try to reuse glass from e-waste and old concrete - we would solve the problem of depositing these materials, and thus made concrete ecological material. This paper presents the current state in this field in Serbia.

## INV26

## Society alike porous media

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Recently, the entire world has experienced a feverish condition induced by the accelerated spread of what is generically known as Covid-19, while major hidden problems of society were suddenly revealed. Here we show that a novel concept for society perceived as a porous medium as we know them in many ceramic materials is effective for substantiating its true nature and twigging its evolution; relations among its constituents are defined and explained in an extensive manner, while the functional mechanisms were rigorously established. This physical model with a fractal-like structure crystallizes social hierarchies into an assembly of similar patterns, forming a unique and solid structure that accurately describes the essence of

# CERTIFICATE

*We have honor to certify that*

## Iva Despotovic

has been invited lecturer at the

Advanced Ceramic and Application Conference X

President

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