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, 26-27. September 2022.

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ORL4
Development of thermoplastic constitutive models for refractory ceramics in wide temperature range

Lorenzo Fiore[1], Andrea Piccolroaz[2], Severine Romero Baivier[3]

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Refractory materials play a crucial role in the steel industry. Research and innovation are fundamental in order to improve design of devices and processes. Lorenzo Fiore's presentation will show the basic equations for the description of the thermo-mechanical modelling of ceramic refractory materials, with a focus on the Bigoni-Piccolroaz yield surface, and the open points for the proper definition of hardening laws for the description of the materials in the whole range of working temperatures.

ORL5
Structural properties of FeCoV alloys produced by PIM / MIM technology

Borivoje Nedeljković[1], Vladimir Pavlović[2], Nina Obradović[2], Nebojša Mitrović[1]

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FeCoV alloys with high saturation magnetization and high Curie temperature, making them useful for high-temperature and power-dense applications (e. g. aviation device). In this study, we report the results of observing the structural properties of 49Fe49Co2V alloy produced by PIM / MIM technology. The starting granulate was prepared by mixing FeCoV powder with a low-viscosity binder. After injection, the raw "green" samples were first treated with a solvent and then thermally with the same aim of removing the binder. MIM technology is completed by high-temperature sintering of "brown" samples for 3.5 hours at temperatures from 1370 ^{O}C to 1460 ^{O}C in a hydrogen atmosphere, which provides the necessary magnetic and mechanical characteristics. Depending on the sintering temperature, structural parameters of particle size D_{max}, Feret X, Feret Y were investigated and analysed.