TWENTY-FOURTH ANNUAL CONFERENCE

YUCOMAT 2023

Hunguest Hotel Sun Resort, Herceg Novi, Montenegro
September 4 - 8, 2023

Program
and
Book of Abstracts

Organised by
Materials Research Society of Serbia

Endorsed by
Federation of European Material Societies

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Conference Secretary: Jasmina R. Jevtić

Technical editor: Dr. Ivana Dinić

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YUCOMAT 2023

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History

The First Conference on materials science and engineering, including physics, physical chemistry, condensed matter chemistry, and technology in general, was held in September 1995, in Herceg Novi. An initiative to establish Yugoslav Materials Research Society was born at the conference and, similar to other MR societies in the world, the programme was made, and objectives determined. The Yugoslav Materials Research Society (Yu-MRS), a non-government and non-profit scientific association, was founded in 1997 to promote multidisciplinary goal-oriented research in materials science and engineering. Main task and objective of the Society is to encourage creativity in materials research and engineering to reach a harmonic coordination between achievements in this field in our country and analogous activities in the world with an aim to include our country into the global international projects. Until 2003, Conferences were held every second year and then they grew into Annual Conferences that were traditionally held in Herceg Novi in September of every year. Following the political separation between Serbia and Montenegro, in 2007 Yu-MRS formed two new MRS: MRS-Serbia (official successor of Yu-MRS) and MRS-Montenegro (in founding). In 2008 MRS-Serbia became a member of FEMS (Federation of European Materials Societies).

General information

DATE AND VENUE: The conference will be held on September 4-8, 2023, at the Hunguest Hotel Sun Resort, in Herceg Novi, Montenegro. Participants will also be accommodated there. The conference will begin on Monday, September 4th, at 08.30 and end on Friday, September 8th, 2023, at 12.30.

REGISTRATION: Registration, registration fee payment, conference materials distribution, etc, will take place at the conference desk (Conference Secretariat) open on Sunday, September 3rd, and Monday, September 4th, from 7.30 to 19.00, on Tuesday, Wednesday and Thursday 07.30-12.00 and 19.00-20.00, and on Friday from 07.30 to 12.00. At registration, the participants are requested to submit a proof of their advance registration fee payment.

INSTRUCTION FOR AUTHORS: The conference will feature Plenary Sessions, Oral Sessions, and Poster Sessions. Time of papers' presentations to be given in Oral Sessions is limited. Time available for delivery is 40 min for plenary and 15 min for other papers, including discussion. Video-beam is available. PowerPoint presentations, recorded on CD or USB flash- memory, should be given at the start of the session. In Poster Sessions, the authors are requested to display their posters minimum one hour before the session and to be present beside their posters during the session. The poster sessions' venue will be open from Tuesday to Thursday.

CONFERENCE AWARDS: Joint Award by MRS-Singapore and MRS-Serbia at the YUCOMAT 2023 Conference. Sponsorship of the ten Awards in the financial amount by the MRS-Singapore, to the authors not older than 35 for the best: Five Oral presentation, Five Posters presentation, and one PhD Thesis. Awarded authors will be announced at the Closing Ceremony of the Conference. Each award consists of a financial amount honorarium, diploma, meeting registration fee to attend the next YUCOMAT 2024 Conference, and a one-year MRS Serbia membership.

ADDITIONAL ACTIVITIES: Traditional Cocktail Party on Monday evening and excursion on Thursday afternoon (boat trip around Boka Kotorska Bay) will be organized again.

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Thermal characterization of bioactive polyphosphate glass with strontium addition

Vladimir S. Topalović[1], Srđan D. Matijašević[1], Jelena D. Nikolić[1], Veljko V. Savić[1], Marija S. Đošić[1], Snežana R. Grujić[2]

[1]*Institute for the Technology of Nuclear and Other Mineral Raw Materials, Belgrade, Serbia,*
[2]*Faculty of Technology and Metallurgy, University of Belgrade, Belgrade, Serbia*

Polyphosphate glasses are a class of bioactive glasses that have gained significant attention in recent years due to their unique properties and potential applications in various fields, particularly in the area of biomedical engineering. These glasses exhibit excellent biocompatibility, which is a crucial requirement for biomaterials. Furthermore, their dissolution and degradation rates can be tailored by modifying their composition, allowing for control over their bioactivity and biodegradability. Polyphosphate glasses also have the ability to form a hydroxyapatite-like layer on their surface when in contact with biological fluids, which facilitates their integration with surrounding tissues. The unique properties of polyphosphate glasses make them promising candidates for various biomedical applications, including bone tissue engineering, drug delivery, and wound healing. This paper presents the thermal characterization of two bioactive polyphosphate glass compositions with the addition of strontium, to investigate the sintering and crystallization processes. The samples were synthesized using the melt-quenching method and then sintered at various temperatures. Differential scanning calorimetry (DSC) and X-ray diffraction (XRD) were used to analyze thermal behavior and crystalline phases formed during sintering. Our results showed that sintering and crystallization are separate processes for both compositions. The addition of strontium to the glass improved its sintering behavior, resulting in a more dense glass structure. Moreover, strontium incorporation did not affect the formation of the crystalline phase during sintering. These findings provide useful insights into the design and development of bioactive polyphosphate glass compositions for bone tissue engineering applications.