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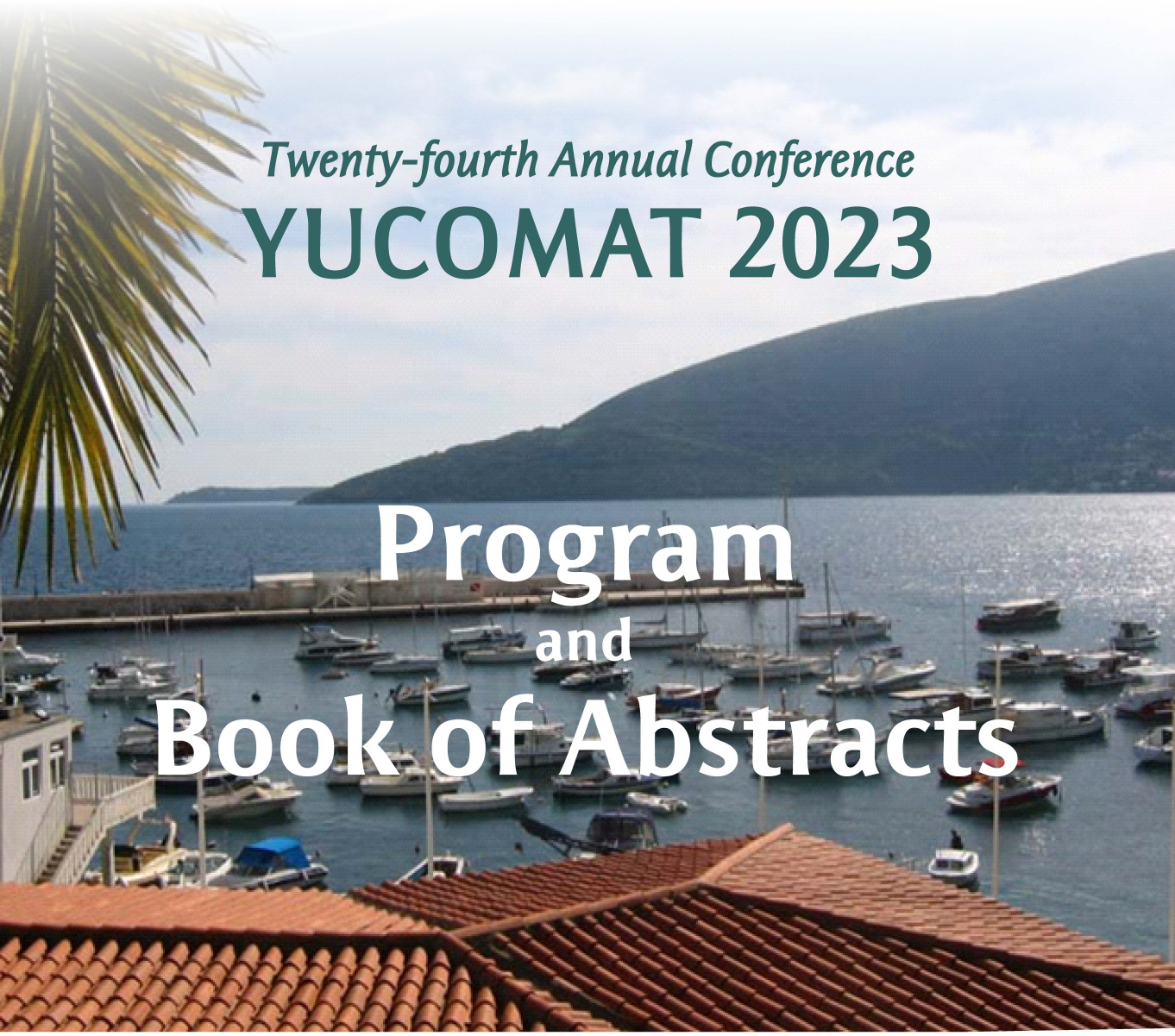

Twenty-fourth Annual Conference

YUCOMAT 2023

Program and Book of Abstracts

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FEMS

FEDERATION OF EUROPEAN MATERIALS SOCIETIES

Materials Research Society of Serbia

24 conference

SERBIA MRS

YUCOMAT 2023

Herceg Novi, Montenegro :: September 4-8, 2023

TWENTY-FOURTH ANNUAL CONFERENCE

YUCOMAT 2023

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

Program
and
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CONTENTS

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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.

P.S.23.

Removal of toxic dye by eco-friendly biochar derived from sour cherry stone

Anja Antanasković[1], Zorica Lopičić[1], Vladimir Adamović[1], Tatjana Šoštarić[1], Danijela Smiljanić[1], Milan Milivojević[2]

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[2]Faculty of Technology and Metallurgy, University of Belgrade, Serbia

In this study, the use of low-cost, widely available waste biomass of sour cherry stone (CS) was used for the production of biochar (CSB), and used as an alternative to the expensive removal techniques for removing toxic dye Brilliant green (BG) from wastewater. Produced CSB was characterized using Fourier Transform Infrared spectroscopy with attenuated total reflectance (FTIR-ATR) and Thermogravimetric method (TG-DTG). FTIR-ATR results indicated the evolution of aromatic functional groups replacing aliphatic groups of CS. The effects of various operational parameters (pH, contact time, initial dye concentration, adsorbent dosage and temperature) were investigated and optimal conditions were determined. According to the results, optimized parameters were: pH 6, contact time of 120 min, initial dye concentration of 50 mg/L, adsorbent dosage of 2 g/L, and temperature of 35 ℃. These parameters were used for kinetic and isothermal investigations. The adsorption of BG was evaluated using two kinetic reaction models (pseudo-first-order and pseudo-second-order). The results showed that the pseudo-second-order model fitted better the experimental data, indicating chemisorption involving valence forces through the exchange of electrons between the dye and CSB. According to the adsorption isotherm analysis, the Langmuir isotherm model better fits experimental data than the Freundlich and Sips models. The maximum monolayer adsorption capacity of BG on CSB was found to be 109.25 mg/g. The R_L value (0.392) verifies that the BG adsorption on CBS is a feasible process. Using CS as a raw material for biochar production, the problem of waste disposal, its decomposition and secondary pollution might be solved. In the same time, this waste materials would gain not only ecological but also significant economic value. These findings demonstrated that CSB, which is made from waste biomass, can be used as a promising and affordable adsorbent for removing dyes from aqueous solution.

*Acknowledgement:*This work was supported by the Ministry of Education and Science of the Republic of Serbia (grant number 451-03-47/2023-01/200023).

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