

TwINSol-CECs International Conference on Environmental and Sustainable Research Solutions, June 5-7, 2025

with satellites

3rd TwINSol-CECs Workshop, June 5-6, 2025

2nd FERTILEAVES Workshop “Sustainable Solutions Through Biotechnological Approaches”, June 5, 2025

Organized by

University of Novi Sad, Faculty of Technology Novi Sad (FoTNS), Serbia

PROGRAM

Thursday, June 5, 2025

Venue: Chamber of Commerce and Industry of Vojvodina, Braće Popović 5, Novi Sad

9.30-10.30 Registration

10.30-10.45 Welcome and opening speeches by the Conference Co-Chairs,
Zita Šereš, Acting Dean, TwINSol-CECs Project Manager for Strategic Issues, FoTNS
Jelena Živančev, FERTILEAVES Coordinator, FoTNS
Nataša Đurišić-Mladenović, TwINSol-CECs Coordinator, FoTNS

**TwINSol-CECs and FERTILEAVES Joint Session: Environmental and Sustainable Solutions Through
Biotechnological Approaches
Session Chairs: Csaba Vágvölgyi and Jelena Živančev**

Plenary lecture

10.45-11.15 Phytomicrobiome as the source of beneficial bacteria and fungi for the alleviation of drought stress in agricultural crops
László Kredics, Orsolya Kedves, Tamás Marik, Csaba Vágvölgyi
Department of Biotechnology and Microbiology, Faculty of Science and Informatics, University of Szeged, Szeged, Hungary

Oral presentations

11.15-11.30 Innovations in climate-resilient crop breeding
Aleksandra Radanović, Sandra Cvejić, Dragana Rajković, Boško Dedić, Biljana Kiprovska, Maja Tanasković, Miloš Krstić, Jelena Ovuka, Sonja Gvozdenac, Sonja Tančić-Živanov, Nemanja Čuk, Verica Zelić, Dušan Dunderski, Jelena Jocković, Milan Jocković, Milan Miroslavljević, Siniša Jocić, Goran Bekavac, Ana Marjanović-Jeromela, Ankica Kondić-Špika, Dragana Miladinović
Institute of Field and Vegetable Crops, National Institute of the Republic of Serbia, Novi Sad, Serbia

11.30-11.45 Sunflower under stress: sustainable breeding solutions for drought adaptation and nutrition quality improvement
Sandra Cvejić, Boško Dedić, Aleksandra Radanović, Nada Grahovac, Milan Jocković, Nemanja Čuk, Jelena Jocković, Sonja Gvozdenac, Srđan Bursać, Siniša Jocić, Dragana Miladinović, Vladimir Miklič
Institute of Field and Vegetable Crops, National Institute of the Republic of Serbia, Novi Sad, Serbia

11.45-12.00 Refreshments

Oral presentations

12.00-12.15 Development of biorational methods for seed protection during storage against biotic and abiotic stressors

Sonja Gvozdenac¹, Jelena Ovuka¹, Miloš Krstić¹, Aleksandra Ilić¹, Nevena Nagl¹, Dušan Stanislavljević¹, Aleksandra Nastasić¹, Vladimir Miklič¹, Milica Škorić¹, Dejan Prvulović², Radenka Kolarov², Snežana Tanasković³, Dušan Marković³, Zagorka Lozanov-Crvenković⁴

¹Institute of Field and Vegetable Crops, National Institute of the Republic of Serbia, Novi Sad, Serbia

²University of Novi Sad, Faculty of Agriculture, Novi Sad, Serbia

³University of Kragujevac, Faculty of Agronomy, Čačak, Serbia

⁴University of Novi Sad, Faculty of Sciences, Novi Sad, Serbia

12.15-12.30 Bioactive ecdysteroid analogues: cinnamate esters and *tert*-butyl oxime ethers with antitrypanosomal properties

Márton Háznagy¹, Máté Vágvölgyi¹, Gábor Girst¹, Sandhya R. Krishnan², Kaushavi Cholke², Jürg Gertsch², Attila Hunyadi^{1,3}

¹Institute of Pharmacognosy, Faculty of Pharmacy, University of Szeged, Szeged, Hungary

²Institute of Biochemistry and Molecular Medicine, Faculty of Medicine, University of Bern, Bern, Switzerland

³Interdisciplinary Centre for Natural Products, University of Szeged, Szeged, Hungary

12.30-12.45 Protoflavonoids: Exploring the non-tumor-related bioactivities of a rare group of natural products

Máté Vágvölgyi¹, George Anis Al-Qassab¹, Gábor Girst¹, Gabriella Spengler², Attila Hunyadi^{1,3}

¹Institute of Pharmacognosy, Faculty of Pharmacy, University of Szeged, Szeged, Hungary

²Department of Medical Microbiology and Immunobiology, Faculty of Medicine, University of Szeged, Szeged, Hungary

³Interdisciplinary Centre for Natural Products, University of Szeged, Szeged, Hungary

12.45-14.00 Lunch break

Oral presentations

14.00-14.15 Tracking Emerging Contaminants in Soil: Integrating pollutant analysis into FERTILEAVES pilot study

Dušan Rakić, Igor Antić, Maja Buljovčić, Nataša Đurišić-Mladenović, Jelena Živančev

University of Novi Sad, Faculty of Technology Novi Sad, Novi Sad, Serbia

14.15-14.30 Innovative *Bacillus*-based technology for plant growth promotion and yield enhancement in sweet potato farming

Ádám Bordé-Pavlicz¹, Tamás Monostori², László Kredics¹, Nataša Đurišić-Mladenović³, Jelena Živančev³, Csaba Vágvölgyi¹

¹Department of Biotechnology and Microbiology, Faculty of Science and Informatics, University of Szeged, Szeged, Hungary

²Institute of Plant Sciences and Environmental Protection, Faculty of Agriculture, University of Szeged, Hódmezővásárhely, Hungary

³University of Novi Sad, Faculty of Technology Novi Sad, Novi Sad, Serbia

14.30-14.45 The potential of digestate- and *Bacillus*-based circular soil amendment to enhance early tomato development,

Tatjana D. Dujković, Ivana S. Danilov, Vanja R. Vlajkov, Jovana A. Grahovac

University of Novi Sad, Faculty of Technology, Novi Sad, Serbia

14.45-15.00 Coffee break

TwINSol-CECs Session: Environmental Research Solutions
Session Chairs: Marinella Farre and Zita Šereš

Plenary lecture

- 15.00-15.30 From data to action: advancing water treatment and monitoring with AI
Claudia F. Galinha
LAQV-REQUIMTE, Chemistry Department, NOVA School of Science and Technology, Universidade NOVA de Lisboa, Caparica, Portugal

Invited lectures

- 15.30-15.50 Degradation of bioplastics and related compounds in a conventional WWTP process by activated sludge
Marta Llorca¹, David Alcaide-Benavides^{1,2}, Eloy Torres¹, Marinella Farré¹
¹ON HEALTH Research Group, Environmental Chemistry Department, IDAEA-CSIC, Barcelona, Spain
²Doctoral Programa in Analytical Chemistry and Environmental Science, Dep. Of Chemical Engineering and Analytical Chemistry, University of Barcelona, Barcelona, Spain

- 15.50-16.10 Embracing circular economy principles in wastewater treatment: by-products from the food industry as effective biosorbents for pollutant removal
Natalija Velić¹, Marija Stjepanović¹, Marta Ostojčić¹, Darko Velić¹, Janez Gorenšek², Sandra, Budžaki¹
¹University of Osijek, Faculty of Food Technology Osijek, Osijek, Croatia
²IAMB-Institute for Applied Mycology and Biotechnology, Celje, Slovenia

- 13.00-17.00 **3rd TwINSol-CECs Workshop - TwINSol-CECs capacities and results - interactive session with project teams**

Due to the relocation of the event from Faculty of Technology Novi Sad to the Vojvodina Chamber of Commerce and Industry, visits to the TwINSol-CECs laboratories will be replaced by a dedicated interactive session where participants can meet the research teams, discuss the capacities of the laboratories in front of the poster presentations on the equipment and project research activities.

Friday, June 6, 2025

Venue: Chamber of Commerce and Industry of Vojvodina, Braće Popović 5, Novi Sad

- 10.30-11.00 Registration
- 11.00-13.30 **Joint poster session of the TwINSol-CECs Conference¹ and the 3rd TwINSol-CECs Workshop**
(set-up Friday, June 6, 10.30-11.00, dismantling on Friday, June 6, 16.30-17.00, or Saturday, June 7, 12.45-13.30)
- 13.30-14.30 Lunch break

¹ For the list of poster presentations, please refer to the end of the program.

TwINSol-CECs Session: Environmental Research Solutions
Session Chairs: Marta Llorca and Igor Antić

Plenary lecture

- 14.30-15.00 Micro- and nanoplastics: from the environment to humans
Marinella Farré¹, David Alcaide¹, Eloy Torres¹, Xavier Borrell¹, and Marta Llorca¹
¹ On-Health Research group, Institute of Environmental Assessment and Water Research (IDAEA), CSIC, C. Jordi Girona, 18-26, Barcelona, 08034, Spain

Invited lecture

- 15.00-15.20 Wide-scope screening of emerging contaminants and their transformation products in wastewaters by using liquid chromatography high-resolution mass spectrometry
Dimitra A. Lambropoulou^{1,2}
¹Department of Chemistry, Aristotle University of Thessaloniki, Thessaloniki, Greece
²Centre for Interdisciplinary Research and Innovation (CIRI-AUTH), Balkan Center, Thessaloniki, Greece

- 15.20-15.35 Coffee break

Invited lecture

- 15.35-15.55 PFAS from useful chemicals to environmental hot topic - solving the (bio)degradation puzzle
Vladimir Beškoski
University of Belgrade – Faculty of Chemistry, Belgrade, Serbia

Oral presentations

- 15.55-16.10 Passive but promising: passive sampling of per- and polyfluoroalkyl acids (PFAAS) in wastewater
Kristina Mráz¹, Antonin Halek ¹, Veronika Svobodova ¹, Vaclav Janda ¹, Jana Pulkrabova ¹, Jakub Hejnic ², Martin Srb ², Darina Dvorakova ¹, Vojtech Kouba ¹
¹ University of Chemistry and Technology Prague, Prague, Czech Republic
² Prague Water Supply and Sewerage Company, Prague, Czech Republic
- 16.10-16.25 Mitigating transport of ionizable organic pollutants in alluvial soils using biochar
Tamara B. Apostolović¹, Marijana M. Kragulj Isakovski¹, Marko D. Šolić¹, Jelena M. Beljin¹, Irina B. Jevrosimov¹, Snežana P. Maletić¹
¹University of Novi Sad, Faculty of Sciences, Department of Chemistry, Biochemistry and Environmental Protection, Novi Sad, Serbia
- 16.25-16.40 Biomonitoring of non-occupational arsenic exposure among advanced lung cancer patients in Vojvodina
Nataša Milošević¹, Danica Szadanić-Velikić², Mirjana Ševo^{3,4}, Danijela Lukić⁵, Maja Milanović¹, Nataša Milić¹
¹University of Novi Sad, Faculty of Medicine, Department of Pharmacy, Novi Sad, Serbia
²University of Novi Sad, Faculty of Medicine, Institute for Pulmonary Diseases of Vojvodina, Clinic for Pulmonary Oncology, Sremska Kamenica, Serbia
³University of Novi Sad, Faculty of Medicine, Novi Sad, Serbia
⁴IMC Banja Luka-Center of Radiotherapy, Part of Affidea Group, Banja Luka, Bosnia and Herzegovina
⁵Institute of Public Health of Vojvodina, Novi Sad, Serbia

- 13.00-17.00 **3rd TwINSol-CECs Workshop - TwINSol-CECs capacities and results - interactive session with project teams**

Saturday, June 7, 2025

Venue: Chamber of Commerce and Industry of Vojvodina, Braće Popović 5, Novi Sad

9.30-10.00 Registration

Session: Environmental Research Solutions

Session Chairs: Claudia Galinha and Nataša Đurišić-Mladenović

Key-note lecture

- 10.00-10.45 Confronting the threat of TFA and other persistent and mobile substances to protect water resources
Hans Peter H. Arp^{1,2}
¹ Norwegian Geotechnical Institute (NGI), Oslo, Norway,
² Norwegian University of Science and Technology (NTNU), Trondheim, Norway

Invited lecture

- 10.45-11.05 Carbon based amendments advancing sustainable solutions for contaminated environmental matrices
Snežana Maletić, Jelena Beljin, Irina Jevrosimov, Tamara Apostolović, Srđan Rončević, Marijana Kragulj Isakovski
University of Novi Sad, Faculty of Sciences, Department of Chemistry, Biochemistry and Environmental Protection, Novi Sad, Serbia

11.05-11.20 Coffee break

Oral presentations

- 11.20-11.35 Comparative life cycle assessment of sewage sludge management options in Serbia
Ferenc E. Kiss¹, Djurdja V. Kerkez², Milena R. Bečelić-Tomin², Anita S. Leovac Maćerak², Vesna Ž. Pešić²
¹ University of Novi Sad, Faculty of Technology Novi Sad, Novi Sad, Republic of Serbia
² University of Novi Sad, Faculty of Sciences, Novi Sad, Republic of Serbia
- 11.35-11.50 UV/Chlorine process for degradation of Ibuprofen and Trimethoprim in aqueous solutions
Anett Čović, Luca Farkas, Teodóra Dragić and Tünde Alapi
Department of Molecular and Analytical Chemistry, University of Szeged, Hungary
- 11.50-12.05 From capture to destruction: a two-step concept for PFOA remediation in aqueous systems
Kristina K. Kasalica¹, Marija M. Lješević¹, Bojana B. Marković¹, Nenad N. Radić¹, Jelena J. Radulović³, Vladimir V. Beškoski²
¹ University of Belgrade - Institute for Chemistry, Technology and Metallurgy, National Institute of the Republic of Serbia, Njegoševa 12, Belgrade, Serbia, *kristina.kasalica@ihtm.bg.ac.rs
² University of Belgrade – Faculty of Chemistry, Studentski trg 12-16, Belgrade, Serbia
³ Anahem LTD, Belgrade, Serbia
- 12.05-12.20 The investigation of the radical set in persulfate ions assisted heterogeneous photocatalysis
Bence Veres, Tünde Alapi
Department of Molecular and Analytical Chemistry, University of Szeged, Szeged, Hungary
- 12.20-12.35 Investigation of the efficiency of melamine-modified biochar-based photocatalysts in Persulfate-based AOPs for Trimethoprim Degradation
Dinesh Chandola¹, Gabor Varga², Zsuzsanna László³ and Tünde Alapi¹
¹ Department of Molecular and Analytical Chemistry, University of Szeged, Szeged, Hungary
² Department of Physical Chemistry and Material Science, University of Szeged, Szeged, Hungary
³ Department of Biosystem Engineering, Faculty of Engineering, University of Szeged, Szeged, Hungary

12.35-12.40 Conference closing remarks

12.40-13.30 Lunch with TwINSol-CECs networking session: Future Project Endeavors

Poster presentations

- P1** PHENOL REMOVAL FROM WATER USING FIR BIOWASTE-DERIVED PYROCHAR,
Aleksandra Adamović, Mirjana Petronijević, Saša Savić, Sanja Panić, Nataša Đurišić-Mladenović
- P2** SUSTAINABLE PHYTOREMEDIATION AND BIOFUEL PRODUCTION USING BRASSICA NAPUS ON MULTI-CONTAMINATED SEDIMENTS,
Ana Marjanović Jeromela, Željko Milovac, Snežana Maletić, Nadežda Stojanov, Nina Đukanović, Stanko Milić, Srđan Rončević, Jelena Beljin, Marijana Kragulj Isakovski, Tijana Zeremski
- P3** EVALUATION OF NANOFILTRATION MEMBRANE MATERIAL IMPACT ON THE REMOVAL OF PHARMACEUTICALLY ACTIVE COMPOUNDS,
Jelena Šurlan, Nikola Maravić, Zita Šereš, Nataša Đurišić-Mladenović, Igor Antić, Jelena Živančev, Claudia Galinha, Carla Brazinha, Joao Crespo
- P4** METHYLENE BLUE REMOVAL FROM AQUEOUS SOLUTION USING HYDROCHARS DERIVED FROM PEACH AND APRICOT POMACE,
Danijela Stefanović, Marija Miladinović, Marija Tasić, Milan Kostić, Biljana Đorđević, Olivera Stamenković
- P5** SOLVENT-ASSISTED METHANOLYSIS OF WASTE POLYETHYLENE TEREPHTHALATE,
Anita Jović, Milan Kostić, Farzam Fotovat, Marija Miladinović, Biljana Đorđević, Olivera Stamenković
- P6** KINETICS OF QUICKLIME-CATALYZED METHANOLYSIS OF HEMP SEED OIL,
Milan Kostić, Biljana Đorđević, Marija Miladinović, Olivera Stamenković
- P7** DEVELOPMENT OF RENEWABLE POLYURETHANE BIOCOMPOSITES FOR WASTEWATER TREATMENT,
Milan Nikolić, Slobodanka Stanojević-Nikolić, Vladimir B. Pavlović
- P8** PINWOOD-BASED B-DOPED PYROCHAR WITH ENHANCED SURFACE AFFINITY FOR CATALYTIC DEGRADATION OF CONTAMINANTS OF EMERGING CONCERN,
Sanja Panić, Nebojša Vasiljević, Mirjana Petronijević, Jelena Živančev, Igor Antić, Nataša Đurišić-Mladenović
- P9** UTILIZATION OF POULTRY WASTE AS A NATURAL BIOSORBENT FOR Cu²⁺ REMOVAL,
Sanja Petrović, Saša Savić, Bratislav Todorović, Staniša Stojiljković
- P10** BIOCATALYTIC PHENOL DEGRADATION USING PEROXIDASE EXTRACTED FROM CABBAGE LEAF RESIDUES,
Saša Savić, Sanja Petrović, Jelena Mitrović, Mirjana Petronijević, Marcela Barbinta-Patrascu
- P11** REMOVAL OF PHENOL FROM WATER USING ACTIVATED CARBON OBTAINED FROM *S. cerevisiae* BIOMASS,
Slobodanka Stanojević-Nikolić, Milan Nikolić, Marina Šćiban, Vladimir Srdić, Vladimir Pavlović
- P12** DEVELOPMENT OF A LOW-COST ZEOLITE COMPOSITE FILTER FOR ARSENIC REMOVAL FROM WATER,
Vesna Vasić, Ivan Stijepović, Dragana Lukić, Marija Milanović
- P13** AGOSERV PROJECT – A UNIQUE PLATFORM FOR SUPPORTING THE DEVELOPMENT OF SUSTAINABLE FOOD SYSTEMS AND FOSTERING AGRO-ECOLOGICAL TRANSITION,
Ankica Kondić-Špika, Dragana Trkulja, Svetlana Glogovac, Igor Vukelić, Dragana Miladinović, Ana Marjanović Jeromela

- P14** SUSTAINABLE DAIRY INNOVATION THROUGH THE VALORIZATION OF SAGE (SALVIA OFFICINALIS) BY-PRODUCTS: TOWARD FUNCTIONAL FOODS,
Dajana Vukić, Mirela Iličić, Maja Bjekić, Katarina Kanurić, Branimir Pavlić, Jovana Degenek, Vladimir Vukić
- P15** ZnCrAl LDH BASED MIXED OXIDE AS PHOTOCATALYST FOR WASTEWATER REMEDIATION,
Đurđica Karanović, Milica Hadnadjev-Kostic, Tatjana Vulic
- P16** MERCURY EXPOSURE: EVIDENCE FROM A BIOMONITORING STUDY IN WOMEN UNDERGOING IN VITRO FERTILIZATION,
Maja Milanović, Marko Ilinčić, Jana Pavlović, Nataša Milošević, Artur Bjelica, Nataša Milić
- P17** BIODEGRADABLE PROTEIN-BASED FILMS INCORPORATED WITH RUTIN AND RUTIN/β - CYCLODEXTRIN COMPLEX,
Mina Bosnić, Željana Radonić, Jelena Ostojić, Jelena Milinković Budinčić, Jadranka Fraj, Lidija Petrović, Sandra Bučko, Jaroslav Katona
- P18** THE INFLUENCE OF KOMBUCHA INOCULUM ON ACIDIFICATION PROCESS, QUALITY OF FRESH CHEESE AND ENVIRONMENTAL SUSTAINABILITY OF PRODUCTION
Mirela Iličić, Maja Bjekić, Katarina Kanurić, Vladimir Vukić, Dajana Vukić, Jovana Degenek
- P19** INSECT FARMING BYPRODUCTS AS AN ALTERNATIVE SOURCE OF CHITOSAN,
Željana Radonić, Jelena Milinković Budinčić, Lidija Petrović, Matija Milković, Tea Sedlar, Danka Dragojlović, Jadranka Fraj, Sandra Bučko, Jaroslav Katona, Mina Bosnić, Jelena Ostojić, Ljiljana Spasojević
- P20** BORON-DOPED BIOCHAR AS AN EFFICIENT ADSORBENT FOR THE REMOVAL OF SELECTED CONTAMINANTS OF EMERGING CONCERN FROM WASTEWATER,
Nebojša M. Vasiljević, Mirjana Petronijević, Sanja Panić, Taciana Guarnieri, João Sério, Geórgia Labuto, Vanessa Pereira, Joao Crespo, Nataša Đurišić-Mladenović
- P21** AFLATOXINS IN SERBIAN MAIZE: THE URGENT NEED FOR INTEGRATED RESPONSES TO CLIMATE CHANGE,
Jovana J. Kos, Bojana Đ. Radić, Radmila O. Radović
- P22** REMOVAL OF BISPHENOL A FROM WATER: CARBON-BASED ADSORBENTS, MECHANISMS, AND TREATMENT EFFICIENCY,
Marija Šobić, Mirjana Petronijević, Sanja Panić, Nataša Đurišić-Mladenović
- P23** POTENTIAL OF LIGNIN AS AN ADSORBENT FOR THE REMOVAL AND DETECTION OF HORMONES FROM WATER,
Dragana V. Lukić, Vesna M. Vasić, Taciana Guarnieri, Geórgia Labuto, Vanessa J. Pereira, João Crespo, Nataša Đurišić-Mladenović
- P24** CROSS-BORDER COOPERATION FOR SUSTAINABLE CANCER RESEARCH: THE DAADRAC PROJECT EXPERIENCE,
Srđan Bjedov, Sergej Cvijić, Ivana Kovačević, Martina Smolić, Marija Hefer, Ana Petrović, Robert Smolić, Đorđe Miljković, Goran Stegnjai
- P25** ANTIBACTERIAL ACTIVITY OF VISIBLE LIGHT DRIVEN PHOTOCATALYTIC CERAMIC BASED NANO-COMPOSITES
Bojan Miljević, Vesna Miljić, Ivana Danilov, Jovana Grahovac, Siniša Markov, Snežana Vučetić