TwiNSol-CECs

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1st TwiNSol-CECs Workshop

Advance multicompound analyses and novel solutions for protection of environmental resources with contaminants of emerging concern in focus

Book of Abstracts

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

20-21 October 2022

TwiNSol-CECs
GA101059867
TWINNING FOR EXCELLENCE IN ENVIRONMENTAL RESOURCES PROTECTION

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BOOK OF ABSTRACTS

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Advance multicompound analyses and novel solutions for protection of environmental resources with contaminants of emerging concern in focus

University of Novi Sad, Faculty of Technology Novi Sad (TFNS), Novi Sad, Serbia, 20-21 October 2022

UNIVERSITY OF NOVI SAD
FACULTY OF TECHNOLOGY
NOVI SAD

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FACULTY OF TECHNOLOGY NOVI SAD

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Dear colleagues, participants of the 1st TwiNSol-CECs Workhop,

On behalf of the TwiNSol-CECs team I would like to welcome you all to the first event in a series of events planned within the TwiNSol-CECs project (GA 101059867). I would also like to thank you for all of your contributions in the form of oral and poster presentations, with the abstracts gathered in this Book of Abstracts accessible via the project website (www.twinsol-cec.com). We are really proud to have won this project in the framework of Horizon Europe and honoured to have this and many more opportunities to share knowledge and exchange ideas within the domain of environmental research.

The aim of this event is to gather scientists and experts interested in, but not limited to, problems of contaminants of emerging concern (CECs) occurrence in the environment and relevant analytical methods, as well as novel solutions for their removal. The Workshop will also go beyond these topics as it will serve as a forum for exchange of project ideas and results in the domain of environmental protection, contributing to the harmonization of research and innovation efforts important for the sustainable transition of whole Europe, as foreseen by the European Green Deal, towards zero-pollution, i.e. toxic free environment. A session dedicated to the ongoing EU funded Twinning projects at the Serbian universities is a part of the Workshop agenda, in addition to the presentations of the scientific results of the registered participants. The session is of two-fold importance: to share information on the latest research developments in Serbia, recognized as “excellence pockets” by the European Commission, and to promote the Twinning calls as a way of boosting institutional research capacities.

TwiNSol-CECs team wishes you all a pleasant stay in Novi Sad, hoping for fruitful discussions on new research ideas and collaboration for better toxic-free common future,

Prof. Dr. Nataša Đurišić-Mladenović
Chair

TwiNS-CECs

GA101059867

TWINNING FOR EXCELLENCE IN ENVIRONMENTAL RESOURCES PROTECTION

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PROGRAM

UNIVERSITY OF NOVI SAD
FACULTY OF TECHNOLOGY
NOVI SAD

1st TwiNSol-CECs Workshop

Advance multicompound analyses and novel solutions for protection of environmental resources with contaminants of emerging concern in focus

University of Novi Sad, Faculty of Technology Novi Sad (TFNS), Novi Sad, Serbia, 20-21 October 2022

Agenda

20 Oct 2022

9,00-15,00	Registration at the Faculty of Technology Novi Sad, Entrance Hall (Bulevar cara Lazara 1)
	Joint morning session of the 1st TwiNSol-CECs Workshop and 2nd ICAPP, **University of Novi Sad Rectorate building, Amphitheater** (Dr Zorana Đinđića 1)
10,45-12,15	Official opening
	Plenary lectures
12,15-12,45	João G. Crespo: **Membranes in Bioprocessing**
12,30-13,00	*Coffee break*
13,00-13,30	Marinella Farré, Marta Llorca, Katerina Savva, Albert Vega: **The challenge of assessing contaminants of emerging concern in the environment**
13,30-14,00	*TwiNSol-CECs Networking with coffee* – Exploring further project endevours
14,00-15,00	*Lunch break*

Afternoon session, **Faculty of Technology, Blue Hall** (Bulevar cara Lazara 1)
Invited lectures on TWINNING projects in domain of environmental research
Chairs: Vladimir Beškoski and Nataša Đurišić-Mladenović

15,00-15,20 Nataša Đurišić-Mladenović, Zita Šereš, Biljana Pajin, Jelena Živančev, Nikola Maravić, Igor Antić, TFNS: **Twinning for excellence in protection of environmental resources: TwiNSol-CECs**

15,20-15,40 Biljana Basarin, Faculty of Science, Novi Sad: **EXTREMECLIMTWIN – Extremely important linking for excelence in hydroclimate research**

15,40-16,00 Snežana Maletić, Faculty of Science, Novi Sad: **Twinning excellence on organic soil amendments effect on nutrient and contaminant dynamics in the subsurface, TwinSubDyn**

16,00-16,20 Vladimir Beškoski, Faculty of Chemistry, Belgrade: **Twinning to address the PFAS challenge in Serbia – PFAStwin**

16,20-16,35 *Coffee break*

16,35-16,55 Đurđa Kerkez, Faculty of Science, Novi Sad: **Twinning for smart water – thinking and rethinking wastewater management in circular economy frame (SmartWaterTwin)**

16,55-17,15 Dragana Miladinović, Ankica Kondić-Špika, Tijana Zeremski, Sandra Cvejić, Sonja Gvozdenac, Boško Dedić, Siniša Jocić, Aleksandra Radanović, Ana Marjanović-Jeromela, et al., Institute of Field and Vegetable Crops, National Institute of Republic of Serbia, Novi Sad: Institute of Field and Vegetable Crops: **CROPINNO - Stepping up scientific excellence and innovation capacity for climate-resilient crop improvement and production**

Invited lectures on topics of TwiNSol-CECs interest
Chairs: Jelena Živančev and Vesna Vasić

17,15-17,40 Szabolcs Kertész, Gabriella Huszár, Balázs Szegedi, József R. Lennert, József Csanádi, Nikolett Sz. Gulyás, Zsuzsanna László, Gábor Veréb, Sándor Beszédes, Cecilia Hodúr, **Opportunities and challenges for membrane separation process intensification**

Oral presentation of registered participants

17,40-17,55 Marija B. Ljević, Branka D. Lončarević, Vladimir P. Beškoski, **Application of respirometry and comprehensive two-dimensional gas chromatography in biodegradation studies**

21 Oct 2022

9,00-10,00 Registration at the Faculty of Technology Novi Sad, Entrance Hall (Bulevar cara Lazara 1)

Morning session, **Faculty of Technology, Blue Hall** (Bulevar cara Lazara 1)
Invited lectures on topics of TwiNSol-CECs interest
Chairs: Marijana Dragosavac and Ivica Strelec

10,00-10,25 Jelena Živančev, Igor Antić, Maja Buljovčić, Dušan Rakić, Nataša Đurišić-Mladenović, **Analysis of CECs in the environment of Western Balkans**

10,25-10,50 Sanja Panić, Mirjana Petronijević, Nataša Đurišić-Mladenović: **The development strategies for nano-engineered heterogeneous catalysts for wastewater treatment – towards greener approach**

10,50-11,15 Sandra Budžaki, Zita Šereš, Ivica Strelec*:* **Immobilization of lipases on functionalised carriers produced from selected agro-food industrial waste**

11,15-11,30 *Coffee break*

11,30-11,55 Nikola Maravić, Zita Šereš, Biljana Pajin, Dragana Šoronja Simović, Nataša Đurišić-Mladenović, Jelena Šurlan, **Membrane technologies in water treatment**

11,55-12,20 Vesna Vasić, Dragana Kukić, Marina Šćiban: **Biomaterials in water and wastewater treatment**

Oral presentation of registered participants

12,20-12,35 Marijana Dragosavac, **Bespoke particles for purification and separation manufactured via membrane emulsification**

12,35-12,50 Dragana, B, Ljubojević Pelić, Nikolina, J, Novakov, Brankica, D, Kartalović, Jelena, M, Vranešević, Miloš, M, Pelić, Željko, A, Mihaljev, Milica, M. Živkov Baloš, **Emerging contaminants in aquatic ecosystem and their effects on fish and human health through the food web**

12,50-13,05 Nikolina, J, Novakov, Brankica, D, Kartalović, Dragana, B, Ljubojević Pelić, Jelena, M, Vranešević, Miloš, M, Pelić, **Use of purified wastewater from slaughterhouse and farm industries in aquaculture and agriculture**

13,05-14,30 Lunch break

Afternoon session, **Faculty of Technology, Central Lobby** (Bulevar cara Lazara 1)

14,30-16,30 Poster presentations with coffee (set-up 11,15-11,40, dismatling:16,30-17,00)

P1 ANALYSIS OF BIODEGRADATION PRODUCTS FROM BIOPLASTICS BY LC-HRMS,
Katerina Savva, Maria Fernandez-Altimira, Maria Vila, Marinella Farré, Marta Llorca

P2 SYNTHESIS AND CHARACTERIZATION OF MAGNETITE-BIOCHAR COMPOSITE AS A POTENTIAL ADSORBENT FOR WASTEWATER TREATMENT,
Mirjana Petronijević, Sanja Panić, Saša Savić, Sanja Petrović, Nataša Đurišić-Mladenović

P3 APPLICABILITY OF LIFE CYCLE IMPACT ASSESSMENT METHODOLOGIES: DESIGN OF NATURE BASED SOLUTIONS FOR WATER DECONTAMINATION,

Sanja Radovic, Maja Turk Sekulic, Sabolc Pap, Boris Agarski, Djordje Vukelic, Jelena Radonic, Jelena Prodanovic

P4 IS THERE A SHARP DIFFERENCE BETWEEN THE DEFINITIONS "COMPOUNDS OF EMERGING CONCERNS" AND "ENDOCRINE-DISRUPTING COMPOUNDS"?

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

P5 OCCURRENCE AND FATE OF PHARMACEUTICALS IN SPANISH INTERMITTENT STREAMS,

Olga Gómez-Navarro, Nicola Montemurro, Sandra Pérez

P6 PRESENCE OF CECs IN CROPS AFTER IRRIGATION WITH CONTAMINATED WATER USING HRMS, Nicola Montemurro, Sandra Perez Solsona

P7 BLACKBERRY STEM LIGNIN AS A BIOSORBENT FOR REMOVAL OF Cr(VI) IONS FROM WASTEWATER,

Vesna, M. Vasić, Dragana V. Kukić, Marina B. Šćiban, Mirjana G. Antov, Jorge Gominho, Ana Lourenço, Ricardo A. Costa, Duarte M. Neiva

P8 MICROPLASTICS AS A VECTOR OF POLLUTION WITH PERSISTENT ORGANIC POLLUTANTS,

Brankica D.Kartalovic, Jelena M. Vranešević, Dušan S.Lazic, Nikolina J. Novakov , Krešimir M. Mastanjević, Kristina J. Habschied

P9 WATER REGULATIONS, TREATMENT OF INDUSTRIAL WASTEWATER AND PROBLEMS IN PRACTICE, Žužana Šandor Milošević

P10 PAHs ORIGINATING FROM TRADITIONAL SMOKEHOUSES AND THEIR EFFECT ON ENVIRONMENT AND HUMAN HEALTH,

Jelena M. Vranešević, Brankica D. Kartalović, Nikolina J. Novakov, Snezana Škaljac, Suzana L. Vidaković Knežević, Miloš M. Pelić, Dragana B. Ljubojević Pelić

P11 APPLICATION OF ORGANIC ACTIVATED BENTONITE IN THE TREATMENT OF AMMONIA-PHENOL WASTEWATER,

Hana Alihodžić, Abdel Đozić, Melisa Ahmetović, Indira Šestan, Sabina Begić, Mirnesa Zohorović, Halid Junuzović

P12 APPLICATION OF RAW BENTONITE IN THE TREATMENT OF AMMONIA-PHENOL WASTEWATER,

Abdel Đozić, Hana Alihodžić, Halid Junuzović, Indira Šestan, Sabina Begić, Mirnesa Zohorović, Melisa Ahmetović

16,30-16,45 Certificate awarding and concluding remarks (Blue Hall)

CROPINNO
STEPPING UP SCIENTIFIC EXCELLENCE AND INNOVATION CAPACITY FOR CLIMATE-RESILIENT CROP IMPROVEMENT AND PRODUCTION

Dragana Miladinović**, Ankica Kondić-Špika, Tijana Zeremski, Sandra Cvejić, Sonja Gvozdenac, Boško Dedić, Siniša Jocić, Aleksandra Radanović, Ana Marjanović-Jeromela, Vuk Đorđević, Marina Tomičić, Goran Bekavac, Sonja Tančić-Živanov, Milan Mirosavljević, Jelena Ovuka, Milan Jocković, Nada Hladni, Biljana Kiprovski, Sanja Mikić, Dragana Trkulja, Svetlana Glogovac, Vladimir Miklič, Nenad Dušanić, Velimir Radić, Nada Grahovac, Dragana Rajković, Nemanja Ćuk, Verica Takač, Miloš Krstić, Jelena Jocković, Jegor Miladinović

*Institute of Field and Vegetable Crops, National Institute of Republic of Serbia, Maksima Gorkog 30, 21000 Novi Sad, Serbia, *dragana.miladinovic@ifvcns.ns.ac.rs*

Twinning project CROPINNO establishes collaboration network between Institute of Field and Vegetable Crops (IFVCNS), Novi Sad, Serbia and internationally-recognized research institutions from Spain (CSIC-IAS, Cordoba), Italy (UNIPD, Padova), and Germany (FZJ, Juelich and UROS, Rostock). Its main objective is to step up and stimulate scientific excellence and innovation capacity of IFVCNS in the field of climate-smart crop improvement and production and enhance its ability to respond and create innovative solutions for the challenges that agriculture faces - climate changes and need to feed the increasing population. The other CROPINNO objectives are strengthening of the research management and administration skills of the IFVCNS and creating the conditions for positioning of IFVCNS as a regional hub of R&I in the area of agriculture and creation of Climate Crops Centre. These objectives will be achieved through a set of training, networking and dissemination activities, including short-term scientific missions, workshops, international summer schools, national and international conferences, as well as Field days.

The expected impacts of CROPPINO include improved excellence capacity, enhanced strategic networking activities, raised reputation, research profile and attractiveness of IFVCNS and the research profile of its staff, strengthened research management capacities and administrative skills of IFVCNS staff, as well as improved creativity supported by the development of new research activities and collaborations and increased mobility of qualified scientists.

Keywords: Climate, Resilience, Crops, Capacity Building

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About TwiNSol-CECs Project

TwiNSol-CECs will generate the collaborative environment required for University of Novi Sad, Faculty of Technology Novi Sad (TFNS), Serbia, to increase and implement its research in the field of CONTAMINANTS OF EMERGING CONCERN (CECs). This will be accomplished by twinning under Horizon Europe programme with two EU research intensive institutions with strong expertise in the field:

- Spanish National Research Council, Institute of Environmental Assessment and Water Research (CSIC), Barcelona, Spain, and
- NOVA University Lisbon, NOVA School of Science and Technology (UNL), Lisbon, Portugal,

which eminent researchers will help TFNS to unlock the scientific potential through intensive networking, transfer of knowledge and technical expertise.

Surveillance of CECs and improvement of the removal technologies have important role in protection of humans and the environmental resources. Such efforts are in compliance with the European Green Deal (EGD) commitment for transition of EU to zero-pollution, toxic free environment. They are also in line with the 2030 Agenda for Sustainable Development. Preserving the quality of water, air, and soil, protecting the drinking water sources, and promotion of the water protection, and pollution reduction from the source to tap, are among the priority actions of EU Strategy for the Danube Region.

TFNS recognized the Twinning Western Balkans call under HORIZON EUROPE progamme of European Union as an opportunity to reinforce own capacities already proven in innovative CECs analysis and removal methodologies and to strengthen its position in the European Resaerch Area. The project answered the call requirements, and it was evaluated with 14.5 out of 15. It started on August 01, 2022 and will last 3 years. The project maximum grant is 1 432 937.50 Euros. The full project name is “TWINNING FOR ENHANCING THE SCIENTIFIC EXCELLENCE OF FACULTY OF TECHNOLOGY NOVI SAD FOR INNOVATIVE SOLUTIONS TO PROTECT ENVIRONMENTAL RESOURCES FROM CONTAMINANTS OF EMERGING CONCERN”.

The project represents a coherent set of knowledge, skills, experience, and awareness raising activities, dissemination, communication, networking, coordination, etc. for successful achieving of the project objectives.

More about the project with the latest news on project activities and events may be found at the project web site www.twinsol-cecs.com.