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Abbreviations

CECs	Contaminants of emerging concern
CSIC	Institute of Environmental Assessment and Water Research of the Spanish National Research Council
EGD	European Green Deal
GA	Grant Agreement
STSE	Short-term Staff Exchange
TFNS	Faculty of Technology Novi Sad
UNL	Nova University of Lisbon, NOVA School of Science and Technology
WP	Work Package



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1. Executive summary

This document reports on so-called Short-term Staff Exchanges (STSEs) performed within the Horizon Europe twinning project TwINSol-CECs (GA 101059867) in the first reporting period of 15 project months. These exchanges are planned as part of the mobility scheme for the researchers of Faculty of Technology Novi Sad from the University of Novi Sad (TFNS), and the project partner institutions, Institute of Environmental Assessment and Water Research of the Spanish National Research Council (CSIC) and Nova University of Lisbon, NOVA School of Science and Technology (UNL), with the aim to expose the TFNS researchers to dynamic international working environment, boosting their careers, and enhancing their research profiles.

This is the publicly available deliverable (D3.7) of the project Work Package (WP) 3 - Reinforcing research knowledge and skills of TFNS. In the Introduction of the document, the aim of STSEs is presented together with the activities planned by Grant Agreement (GA), followed by the section describing the performed STSEs as well as those for which the plans have been set in the first reporting period.

2. Introduction

The general objective of TwINSol-CECs project is to raise the TFNS scientific and innovation excellence in various aspects of research on contaminants of emerging concern (CECs) integrated in broader EU networks of excellence, contributing to national and regional scientific and economic growth and well-being and to the harmonization of advanced research and innovation efforts important for the overall faster and sustainable transition of whole Europe foreseen by European Green Deal (EGD) towards zero-pollution, toxic free environment. One of the elements necessary to be accomplished on the way towards this final goal is to reinforce the research profiles and attractiveness of the TFNS scientific staff and innovation capabilities in the CECs research through the transfer of knowledge and skills from the top-class leading researchers from the partner institutions, CSIC and UNL, thus bridging the gap between national/regional and EU research capacities.

WP3 is dedicated to reinforcement of knowledge and skills of TFNS researchers. There are four tasks within WP3 in total, with task 3.4 dedicated to the so-called Short-term Staff Exchanges (STSEs) under leadership of TFNS. This task is further subdivided into 2 subtasks:

- Subtask 3.4.1 - Meetings for preparation of STSEs and calls for STSEs: it is planned to have the consortium working meetings dedicated to arrangements of the STSEs, call conditions, and STSEs evaluation,
- Subtask 3.4.2 – STSEs: implementation of STSEs and the reporting

Originally, it was planned to form the Committee for STSEs Approval at the beginning of WP3, with responsibility to select researchers from the partner institutions to perform 25 STSEs (15 STSEs of TFNS researchers at premises of the EU partners and 10 STSEs of the EU researchers at TFNS). The TFNS project budget share contains the amount to cover 15 STSE grants to support travel and accommodation (including meals) of TFNS researchers to CSIC and UNL. The application for STSEs is planned to support PhD students from TFNS working in the field of interest for TwINSol-CECs willing to perform joint work at the EU partner institutions. Additionally, other researchers willing to perform research within the field of TwINSol-CECs interest are also eligible for STSEs. There are three types of TwINSol-CECs STSEs:

1. Mutual exchanges for valorization of analytical protocols and application of software for wide-range screening of CECs,
2. Mutual exchanges for performing the TwINSol-CECs research projects, including not just research activities, but also the results evaluation, and preparation of joint research paper, and
3. Mutual exchanges for novel research and collaborative projects within the area of interest for TwINSol-CECs.

Every researcher during the STSE has supervisor at the host institution for following the progress toward efficient achievements of planned work. After STSE, the visiting researcher should give oral presentations on the performed work at the host institution, and to submit the report on STSE.

3. STSEs in the first reporting period

In order to follow the original idea from the project description in GA, the Committee for STSEs' Grant Approval was established during the 6th-project month meeting, February 6, 2023, consisting of Dr. Marinella Farre, CSIC, Prof. Joao Crespo, UNL, and Prof. Zita Šereš, TFNS. They have been in charge of arranging distribution of the STSEs' grants to the researchers based on their main research interest in accordance to overall project interest to level up the competences and be prepared for the project research. Ten TFNS researchers, including two PhD students, from the TwiNSol-CECs project team, whose research interests coincide with the TwiNSol-CECs research topics, prepared motivational letters explaining why they would like to have possibility to visit the partner institution and perform the research at CSIC and UNL, and what they expect from the visits with expected outcomes on their career.

3.1. STSEs of TFNS researchers

The first STSEs were performed by two junior researchers from TFNS (1 PhD student, Jelena Šurlan, and 1 early-stage researcher, Dr. Nikola Maravić, teaching assistant at time of STSE), who visited UNL in the period between 16th May – 14th June 2023. Their STSEs were dedicated to the project research planned within WP4 – TwiNSol-CECs research projects: Wide range CECs surveillance in the Serbian environmental resources and comparative study of selected innovative removal treatments. More precisely, it was a part of:

- Task 4.2 - Exploring integrated approaches in membrane-based removal of CECs from water (leader UNL)
- Subtask 4.2.1 - Investigation of the membrane-based experiments and the process efficiency for removal of selected CECs.

The host of this visit was Prof. Joao Crespo, who arranged details of the visit program with Dr. Claudia Galinha, Dr. Vanessa Pereira, Dr. Carla Brazihna, and Dr. Sylwin Pawlowski. Visit program included working meetings regarding arrangements of the joint research, training on advanced equipment, and nanofiltration experiments for testing the efficiency of various membranes and process setup on CECs removal at the environmental relevant concentration levels. The research is planned to be a part of the PhD Thesis of Jelena Šurlan.

Prior these two study visits to UNL, different issues of the necessary research activities were discussed and arranged through the intensive communication between TFNS and UNL, including online meetings. When discussing the analytical part of the experiments, representative of CSIC was also included in the online meeting.

After the STSEs, Jelena Šurlan and Dr. Nikola Maravić prepared report, which was approved by Prof. Joao Crespo as a supervisor of the performed research, and additionally by Prof. Zita Šereš as a mentor

of Jelena's PhD thesis. This report is available at the internal page of the project website. Jelena Šurlan and Nikola Maravić presented the experiments performed during the online meeting with UNL and TFNS representatives, held on August 31, 2023. Furthermore, at the working meeting of the TFNS team on September 5, 2023, Jelena Šurlan presented the main work conducted during their STSEs.

3.2. STSEs at TFNS

During the period 25 June - 8 July 2023, Dr. Nicola Montemurro from CSIC visited TFNS for joint research work and the participation in the 1st TwiNSol-CECs Summer School (2-6 July 2023) as a trainer (described in D3.5). Thus, this STSE was set to cover the Summer School, but also it started a week before the School to have enough time to prepare the School's practical sessions with TFNS researchers involved in the School organization too. This STSE lasted 2 weeks, because of many duties of Dr. Nicola Montemurro had at the home institution at that time, but his involvement in the School was found to be very important as a representative of the prestigious CSIC team, which added the attractiveness of the School's program, and was very helpful for the School efficient preparation.

Prior the Summer School, Dr. Montemurro prepared the practical sessions of the School together with the TFNS researchers from Laboratory for Chromatographic Analysis, Dr. Jelena Živančev and Dr. Igor Antić. Additionally, they work together on processing HRMS data by newly purchased software at the TFNS Lab. Dr. Nicola Montemurro presented the report to the TFNS team; the report was approved by Prof. Nataša Đurišić-Mladenović, and it is uploaded on the internal page of the project website.

3.3. Plans on further STSEs of TFNS researchers set in the first reporting period

During several working meetings at the end of August 2023, visit of three TFNS researchers to UNL, Lisbon, was agreed to be performed during November 2023 (16th project month). It was decided that Dr. Vesna Vasić, Dr. Mirjana Petronijević, and Jelena Šurlan, PhD student, are going to continue the project research dedicated to removal of CECs by membrane processes during these STSEs.

Additionally, during the visit of Dr. Marinella Farre to TFNS, September 26-27, 2023, it was decided to organize STSEs for three TFNS researchers at CSIC, Barcelona, for joint research. Provisional period for these three STSEs is planned to be January or February 2024, but dates will be arranged in accordance to the schedule of the host CSIC researchers.