DAVO JOINS A NEW EUROPEAN CIRCULAR ECONOMY PROJECT CALLED SYMSITES
"ECOSITES IMPLEMENTATION FOR INDUSTRIAL-URBAN SYMBIOSIS THROUGH SOCIAL AND TECHNOLOGICAL SOLUTIONS"

- The project, with a duration of 4 years, began on June 1
- SYMSITES outputs will accelerate the green and digital twin transition of Europe to a circular economy, one of the main scopes defined by the European Commission on March 2020.

Bucharest, 29 November 2022. DAVO has joined AITEX, the research and innovation center and 28 other partners from 9 different countries in a new international project named SYMSITES. Members include universities, research centers, private companies, wastewater management plants and local government associations, from Spain, Denmark, Austria, Greece, Germany, Belgium, Italy, Romania and Israel.
Despite starting the project on June 1, on July 5 and 6, the kickoff meeting was held in Alicante, attended by representatives of the 30 partners.
During the execution period of 48 months, four hubs called "Ecosites" will be established in four European regions with different economic, social and environmental aspects, namely: Spain, Denmark, Austria and Greece.

SYMSITES PROJECT

The processes and products to be developed will be dedicated to recycling. The usual process of waste disposal is usually based on selective collection using containers. The municipal company relocates it to the urban waste treatment center. There, it is classified and goes for material recovery, incineration, or landfill. The recovered materials are sold as secondary materials to companies and industries, which use them for new manufacturing processes. Ultimately, new products that are made up from a percentage of recycled materials reach citizens through marketing channels. All these links shape the circular economy chain. However, each one separately is incapable of closing material cycles, since it requires the functions that the rest fulfills.
Here comes SYMSITES project (awarded within the European call: HORIZON-CL4-2021-TWIN-TRANSITION-01-14) whose objective is to develop new technologies and stakeholders engagement methodologies to prove the concept of regional Industrial-Urban Symbiosis (Figure 1), Which proves cooperation between the different organizations for the proper functioning of the circular economy. Far from the competition paradigm, cooperation and collaboration between citizens, municipalities and companies is needed. In this case, each entity involved in waste management is a link within the waste management chain.

Figure 1. Symsites concept

With the aim of demonstrating this concept as a key element of the project, the EcoSites, above-mentioned, will treat industrial waste of different origin. (Figure 2)

- Spain (Alcoy): cosmetic and textile industries.
- Denmark: brewery and local agriculture.
- Austria: meat industry.
- Greece: olive oil industry.

Figure 2. EcoSites

The role played by the EcoSites is very simple. They are based on wastewater treatment plants, industries or agriculture companies in the region forming a hub that will collect wastewater, biowastes, and non-recyclable waste generated by both the urban and industrial environments. A novel co-treatment will be established at the regional wastewater treatment plants to generate clean water, energy, several upcycled side streams of products (sludges, biogas), and high added value products (platform molecules, fertilizers, PHAs), etc for reuse by the industries in the specific region.

List of participants

Participant No.	Participant organisation name	Country
1 AITEX (Coordinator)	Asociación De Investigación De La Industria Textil	Spain
2 CSIC	Agencia Estatal Consejo Superior de Investigaciones Cientificas	Spain
3 BIU	Bar Ilan University	Israel
4 ITG	Fundacion Instituto Tecnologico De Galicia	Spain
5 UPC	Universitat Politècnica de Catalunya	Spain
6 KUL	KU Leuven	Belgium
7 FACSA	Sociedad De Fomento Agricola Castellonense, S.A.	Spain
8 FOVASA	Fomento Valencia Medioambiente SLU	Spain
9 BOKU	University of Natural Resources and Life Sciences, Vienna	Austria
10 NTUA	National Technical University Of Athens.	Greece
11 GREENE	Greene Waste to Energy	Spain
12 OSM	OSM-DAN	Israel
13 PRJ	Project Hub 360 Scientific and Applied Solutions	Italy
14 ICLEI	ICLEI- Local Governments for Sustainability	Germany
15 AGRA	AGRA Consulting & Planning	Israel
16 GERM	Germaine de Cappuccini	Spain
17 JOV	Francisco Jover S.A.	Spain
18 BER	Fleischwaren Berger Gesellschaft Mbh & Co Kg	Austria
19 AAT	Aat Abwasser- Und Abfalltechnik GmbH	Austria
20 BOFA	Bornholms Affaldshehandling	Denmark
21 BEOF	Bornholms Energi & Forsyning	Denmark
22 GARD	Gardejer Finn Harild	Denmark
23 BRYG	Svaneke Bryghus A/S	Denmark
24 DAVO	S.C. Davo Star Impex SRL	Romania
25 GST	Gemeinde Abwasser verband Südöstliches Tullnerfeld	Austria
26 SP	Spitzer GESMBH	Austria
27 KLINK	KlinK srl	Italy
28 MWA	Dimos Ditikis Achaias	Greece
29 SIRMET	Sirmet Engineering & Management	Greece
30 EEP	Elaiourgikes Epixeiriseis Patron	Greece

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SYMSITES

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Funding Program: NUCLEUS Program PN 19 17 „Textile and Leather Industry at 2022 Horizon – from Tradition to Sustenability and Multidisciplinarity through Research-Development-Inovation – TEX-PEL-VISION"

Project Title: Advanced multifunctional logistics, communication and protection systems to improve the safety, operability and effectiveness of emergency workers – acronym SiMaLogPro

Contract No.: 19 17 ⇨ Project code: 19 17 02 01

Starting date: January 2019 ⇨ Ending date: December 2022

Project Objective: The design and development of integrated modular systems of multi-risk protective clothing and UAV platforms for observation-monitoring-communication-logistics with the purpose of operational and response capacity increase in emergency situations missions.

Main results:

The multi-risk protective clothing (PPE) system for emergency intervention is using a multi-layer structure:

- Inner layer, in contact with the skin/ undergarment PPE - which mainly takes over the functions of sensory and thermophysiological comfort, ensures thermal protection; Composition: knit > 93% meta-aramid / 5% para-aramid / 2% antistatic fibers.
- Intermediate (base) layer: Service uniform - with the function of a barrier against the risk factors with the highest probability of occurrence in the event of an intervention action (thermal risks: convection heat, flame; risks from the external environment: splashes with liquids; mechanical risks: cutting, abrasion, etc.); on this layer is mounted a small electronic transponder; Composition: woven fabric > 29% aramid/ 59% FR viscose / 10% PA / 2% antistatic fibers;
- Outer layer: modular protective layers - specialized PPE for intervention missions in case of: fires, dangerous materials, weapons of mass destruction, firearms, extreme weather conditions, etc.; Composition (four different variants):
  - woven fabric: 78% para-aramid/ 20% meta-aramid/2% antistatic fibers (with fire protection role)
  - 3D spunlace non-woven: para-aramidic / meta-aramidic fibers + ePTFE / PU bicomponent membrane
  - non-woven: FR viscose/ aramid fibers + FR viscose / aramid / PA fabric;
  - laminate: PES fabric + PTFE film + PES knit

Inner Laver

Intermediate Laver

Outer Laver

Single-sail type glider

The UAV platform for observation-monitoring-communication-logistics is using a paraglider flexible wing UAV (PPG-UAV) and electronics for PPE tracking. It can operate with two types of wings, single-sail type and double-sail type. This type of UAV has major cost advantages over a fixed-wing UAV.