



## GREENOMED NEWSLETTER

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## **The CCE Varaždin Living Lab: Laboratory for Environmental Engineering sign cooperation agreement, Croatia**

The Faculty of Geotechnical Engineering in Varaždin conducts scientific research in the field of technical sciences: environmental engineering, geotechnics and hydrotechnics, mining, petroleum and geological engineering and in the field of natural sciences.

The Faculty wants to be recognized at national level as one of the leading research institutes in the field of environmental engineering, especially those of its segments that are aimed at the identification, design, construction and management of systems for solving problems of air, soil, water and nature pollution, solving the sectorial pressures of noise, light pollution, traffic and providing answers to cross-sectorial challenges. There are three laboratories at the Faculty: Laboratory for Environmental Engineering, Laboratory of environmental geochemistry and Geotechnical Laboratory. The Faculty is also a member of two KIC consortiums – KIC Raw Materials and KIC Climate.

The CCE Varaždin and the Laboratory for Environmental Engineering of the Geotechnical faculty had a series of meetings in order to organize the Greenomed Living Lab and the signing of a cooperation agreement on professional, scientific, research, development and educational projects will be held on 8th April 2019. The Greenomed Living Lab would be a place where theoretical knowledge, scientific research and practical experience in the field of interdisciplinary technical sciences could be provided by staff of the Faculty in order to support the green regional ecosystem. It will be a meeting point for several regional stakeholders to get together and share knowledge and expertise in order to boost innovation for green manufacturing innovation. Joining the concept “Closing the loop” and enabling the realization of regional innovative

entrepreneurial projects which aim to improve product design by promoting the reparability, durability and possibilities for upgrading and recycling of products, the partnership will enable systematic transition toward the circular economy.

The addressed set of technologies are recycling processes where waste from one industry becomes raw material in the other industry, eco-innovations, environmental product declarations, testing and application of new and alternative methods of water & air purification in the semi-industrial scale, including photocatalytic engineering, research and development of chemical sensors, biosensors for use in the environment, industry & biomedicine, particularly fast and cheap point-of-care for food industry.

Stakeholders using the Living lab are academia researchers, undergraduate and graduate students in scientific work through their thesis, PhD students through their scientific work on gaining the PhD diploma. Living lab will be open to interested regional companies, non-governmental organizations and researches from other institutions.



## **Testing Activities and Working Groups in the Region of Central Macedonia, Greece**

Testing activities are continued in the Region of Central Macedonia (RCM). Until now, three



regional working groups have been created focusing on different domains of the bio-economy and circular economy sectors. Members of the regional working groups are SMEs, social cooperation enterprises, start-ups, and research institutions which join their forces in order to create the bases towards the adoption of greener manufacturing processes from the industries of the region. I-BEC, which acts as the local facilitator, after conducting mapping studies, have gathered and matched different types of stakeholders in order to create an industrial symbiotic network for each one working group. Moreover, I-BEC is charged to transfer the Greenomed methodology to the regional clusters and intermediaries involved in testing activities regarding the development of pilot plants. As of today, almost 50 companies have come in contact with the principles, the aim and the processes that Greenomed project follows, while 10 SMEs are closely involved in the testing activities on the region and are members of the three local working groups. An extended concept note for each one was already created and further discussions have been made in order to clarify technical issues of the joint venture in the framework of Greenomed. In the following period, i-BEC will start working upon the preparation of business plans linked in the context of the three concept notes that had already submitted. The first concept note is dealing with the exploitation of wineries' biomass residuals to energy production, the second one focusing on the exploitation of agro-energy industries' residuals and by-products to produce feed and food ingredients through microalgae cultivation, while the third concept note has to do with the exploitation of ginning and spinning mills' solid waste to energy production.

Greenomed project is an excellent opportunity for the Region of Central Macedonia to create favourable conditions in order to attract "green" investments. Furthermore, Greenomed methodology could be a valuable tool for the

local industries towards the reduction of the businesses' operational costs, the development of trading opportunities for the promotion of the businesses' products/services in the emerging "green market" as well as the improvement of the businesses' social profile and recognition.



## PROJECT PROGRESS

Between February and March 2019, the activities of GREENOMED progressed with a specific focus on testing, transferring and living labs. Moreover, an intense effort was made on preparation and organisation of the second GREENOMED conference, which will be held on 11 April 2019 in Barcelona. The activities for transferring of the GREENOMED methodology are ongoing and were further accelerated after the testing seminar, which was held in Lyon. The dissemination activities are ongoing in parallel as in previous periods, spreading awareness on the project and disseminating the intermediary results. More in detail:

- The transferring activities went on with creation of the customized format for transferring activity for partners based on the dynamics of each region.
- The organisation of second GREENOMED project was intensively followed up and the draft agenda was shared among stakeholders and invitation was sent out to relevant companies, clusters as well as



Programme MED and Green Growth community.

- The **8th Communication meeting** took place on the **19th of March 2019**, with a specific focus on the organisation of the second conference and the status of living labs.
- Communication at horizontal level was followed up and GREENOMED participated in the policy workshop organised by Green Growth community in Thessaloniki in March 2019.
- **Around 20 dissemination activities** were carried out by all the partners to enlarge GREENOMED community, engaging several stakeholders in testing activities, including companies, universities, and research centres.

## WHAT'S HAPPENED IN GREENOMED? (Feb – Mar 2019)

### Digitalization of production - Challenges of EU regions in Vanguard ESM for selected technology companies, Ljubljana, Slovenia

On the 21<sup>st</sup> of February 2019, Greenomed project and the **Vanguard initiative** were presented by Simona Knežević Vernon from Technology park Ljubljana at the international event at the Faculty of Mechanical Engineering, University of Ljubljana, which was organized by SRIP Factories of the Future.

The workshop titled *Digitalization of production - Challenges of EU regions in Vanguard ESM for selected technology companies* presented the Vanguard demo case "Digital transformation" in the field of Efficient and sustainable manufacturing. The leaders of the demo project, Coen de Graaf and dr. Marco Sacco, presented this demo case, which deals

with the digitization of the factory of the future. Prof. Niko Herakovič from the Faculty of Mechanical Engineering at the University of Ljubljana presented the Slovenian pilot "Digital Factory" and the LASIM laboratory.

The presentation was followed by a pilot demonstration showing the operation of the task agents in conjunction with the digital twins in the active connection of the various technologies of the industry 4.0.

The participants agreed to deepen the cooperation of academic institutions between the Brabant region in the Netherlands and Lombardy, Italy, regarding further joint development of the technology for the digitization of production in the activation of the Slovenian industry.



### Visit to the Living Lab of Plastipolis in Lyon, France

On 29<sup>th</sup> of January 2019, concomitant with the GREENOMED Testing seminar, hosted by Plastipolis, a presentation and visit of the Living Lab – Ampere Lab took place as well.

This was the first visit of a living lab in France for the Greenomed project. Located in the University Campus of Lyon, the lab received the visit by all participants, who had the opportunity to discuss with the laboratory coordinator about how to forecast potential collaboration within Greenomed members. The living lab is

dedicated to smart plastics activities and host a training program for Smart Plastics Project Manager from September 2018.



## Closing the loops: Promoting circular economy in Marche Region (EU Industrial Days) in Ancona, Italy

On 8<sup>th</sup> of March 2019, the EU Industrial Days took place with the theme Closing the loops: Promoting circular economy in Marche Region, event organized by our partner ACMM at Mole Vanvitelliana, Ancona.

“Closing the Loop” has represented for Marche Region the chance to spread the importance of circular economy as a new business opportunity for companies of the regional territory.

During the first part of the morning session, there have been several testimonies of experts, thanks to whom policies and tools around circular economy have been presented, starting with an overview from an European perspective and going on to the National and finally Regional context.

During the second part of the morning session, participants have been divided into working tables addressing targeted issues aligned with the company's needs. The working tables focused on four strategic drivers, aligned with

the Regional Clusters: de- and re-manufacturing, industrial symbiosis, food processing and furnishing.

In particular, during the working table on De and re-manufacturing, the Greenomed project was presented by Golboo PourAbdollahian from STIIMA-CNR, as example of best practice able to boost the adoption of eco-sustainable practices among manufacturing SMEs of the local territory.



## Meeting on “Economics and Management of technology transfer: in Ancona, Italy

On 12<sup>th</sup> of March 2019, Cluster Marche Manufacturing took part to the restricted meeting on economic and management about technology transferring.

The goal of the meeting was to show the main methods of technology transfer within the university environment and analyse tools for the valorisation processes of research results with specific reference to the start-up of new companies.

During the meeting, ACMM had the possibility to show to the audience the relevance of Greenomed Project as the most important collaborative projects to which the Cluster is working at.

Through a proper presentation, ACMM showed the goals and activities realized within the

framework of the Project and the consolidation of the working group on de and re-manufacturing for composite materials.



## THEMATIC WORKING GROUPS ON CIRCULAR ECONOMY” EVENT: in Thessaloniki, Greece

On 6 March 2019, 60 partners of the Interreg MED Green Growth Community gathered together to join the “Thematic Working Groups on Circular economy” event, bringing the community one step closer to translating our objectives into policy outputs.

The Union for the Mediterranean (UfM), HYDROUSA H2020 and SCREEN H2020 projects were also invited to this event, sharing their valuable experience and letting us further explore our potential for collaborative activities.

During the event, the outline of the Green Growth Green Book, policy recommendations, legal recommendations and white papers were presented. A dedicated workshop on white papers also took place, summarizing the challenges and problems, success factors, conclusions and key project outputs of each TWG.

The (4) TWGs of the Green Growth Community are formed in line with the EU Action plan on Circular Economy, featuring the thematics of: production and consumption- resource

efficiency, production and consumption- smart and green public services, waste prevention and management, competitiveness and innovation.



TWG parallel sessions were organized focusing on the debriefing of the Green Growth policy outputs and the analysis of the modulars projects’ contributions.

## TPLJ Living Lab Opening event in Ljubljana, Slovenia

On the 21<sup>st</sup> of March 2019, took place the Grand opening of the GREENOMED – TPLJ Living Lab at the premises of Technology park Ljubljana. The opening was held alongside the first Slovenian AR/VR conference LOOK AROUND 360, dedicated to the VR / AR technologies of the future.

This great technological playfield opens the door to a new laboratory for all enthusiasts of virtual and augmented reality in Slovenia and beyond.

According to global technology analysts, virtual and augmented reality will represent in the near future a similar necessity like what is currently a web site for businesses. Solutions in this field already reach billions of EUR of annual turnover, and by 2020, according to industry forecasts, they will increase to more than EUR 120 billion.





There were Workshops dedicated to showcase of green technologies in manufacturing (focusing on VR and AR technologies), under the scope of the GREENOMED project.



### VR/AR LABORATORY

The laboratory will represent a meeting point for Slovene VR / AR technology and will include all key stakeholders like faculties, research organizations, companies and individual enthusiasts who work towards the development of this technology. Companies and individuals will be able to develop ideas and test products in the field of virtual and enriched reality also in relevance to green technologies. In addition to the necessary infrastructure and equipment, they will also have the mentor support of renowned experts.

### VR/AR CONFERENCE

The AR/VR conference LOOK AROUND 360 and the grand opening of the Living Lab took place together, where the Greenomed project was presented and communicated.

The project topics were mostly linked to Miha Pipans (Faculty of Mechanical Engineering, University of Ljubljana, LASIM Lab) presentation called "Using VR / AR technologies in conjunction with digital transformation" where an application of AR/VR technology has been strongly linked to green technologies and energy efficiency in production.



The conference attendance reached more than 140 people, making this the biggest AR/VR event and Greenomed dissemination activity in Slovenia.

## WHAT'S NEXT IN GREENOMED?

(Apr – May 2019)

### GREENOMED SECOND CONFERENCE in Barcelona, Spain

The GREENOMED second conference will take place **on 11 April 2019 in Barcelona**. The event gathers regional stakeholders from MED regions in particular companies and clusters and provides an opportunity of synergy exploration and collaboration between the industrial stakeholders for the most innovative green manufacturing topics and technologies. During the morning session, participants have the opportunity to understand about the concept and approach of GREENOMED project and to get to know about the experience of Lombardy region and Catalonia region as the co-coordinators of Vanguard Efficient and Sustainable Manufacturing pilot. Moreover, during the panel session experts representing different stakeholders including companies, clusters and policy makers will discuss about boosting interregional collaboration for competitiveness to support companies in



implementation of innovative green technologies.

During the afternoon, participants will have the opportunity to attend the thematic working sessions which aim at initiating discussion between companies and clusters from different MED regions about the implications and application of the green manufacturing technologies around 5 themes of plastics, circular economy, energy-efficiency, agri-food manufacturing and bio-economy. The second part of afternoon session is dedicated to a matchmaking session to provide the opportunity of networking and exploration of potential collaborations among the industrial stakeholders.

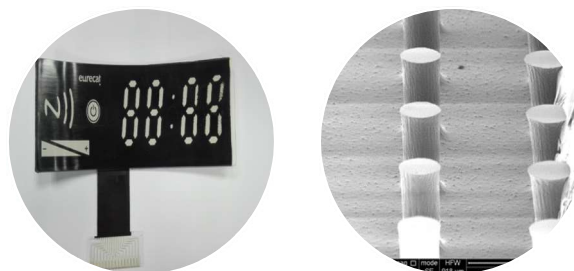
### **Agreement on cooperation between CCE and the Geotechnical faculty in Varaždin, Croatia**

**On the 8<sup>th</sup> of April 2019**, the CCE Varaždin and the Laboratory for Environmental Engineering of the Geotechnical faculty will be signing a cooperation agreement on professional, scientific, research, development and educational projects. The agreement will be undersigned in the frame of the Open day of the Geotechnical faculty, following a series of meetings between the parties aiming at the organization of the Greenomed Living Lab in Croatia.

### **Catalonia inter-regional living lab event**

**On the 12<sup>th</sup> of April 2019**, the Catalonia inter-regional living lab event will be held in Cerdanyola del Vallès. The pilot plant is the Catalan Functional Plastics infrastructure. The technologies include in mold electronics such as Integrated Sensors, Touch interactive surfaces, Integrated light emitting devices. Moreover, NanoTexturing Surface

Functionalization & Control technologies are implemented in the pilot through Surface energy: Hidrofobic / Hidrofilic, Aesthetics: Color, light paths, and Mechanical behaviour: friction.



Different types of stakeholders (internal and external to the project) including companies, clusters and RTOs will join the event.





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