LIFE15 ENV/ES/000658 LIFE-ECOTEX

Newsletter II: Second Semester 2017

CIRCULAR ECONOMY APPLIED TO POLYESTER TEXTILE WASTES

IN THIS SECOND NEWSLETTER WE SHOW THE PROGRESS OF THE PROJECT, BETWEEN JULY AND DECEMBER 2017, ENSURING THE ACHIEVEMENT OF RELEVANT TECHNICAL ADVANCES, IN LINE WITH THE RESULTS THAT ARE EXPECTED IN THE FRAME OF PROJECT LIFE-ECOTEX

MEMBERS

GAIKER-IK4 Technology Centre, recycling technologies experts.

CTCR. Footwear Technology Center of La Rioja, expert in footwear technologies.

BETA RENOWABLE GROUP S.A., is a sustainable company – energy operator.

EKO-REC Ecología, Reciclaje y Medio Ambiente S.A., manufacturer of synthetic textile fibres.

LOGROTEX, manufacturer of nonwoven textile products.

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ACTIONS

1 Technical Follow-up meeting at CTCR Demonstration of the Process PET2BHET

The second technical follow-up meeting of the Project LIFE-ECOTEX was carried out at the facilities of CTCR with the attendance of all the partners involved in the Project: GAIKER-IK4 (Leader), BETA, CTCR, EKOREC y LOGROTEX. During the meeting, the progress of the project was exposed, focused on the demonstration of the catalytic glycolysis process of textile polyester waste to generate the purified monomer BHET, that will be the starting point for the synthesis of the new polyester. Moreover, the results of the design and simulation of the industrial processes were presented: PET2BHET Process and BHET2PET Process, together with the dissemination, networking and management activities carried out by the partners of the Project. Finally, GAIKER presented the first monitoring report received from the European Commission, and the future tasks were planned.

2 Over 300 kg of BHET generated

After some months of continuous reactions in the pilot plant and purification operations, GAIKER-IK4 has produced over 300 kg of BHET, that are ready for their polymerisation and the production of PET.

Detail of BHET obtained during the piloting and demonstration of the process PET2BHET through catalytic glycolysis.

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ACTIONS

3 NETWORKING ACTIONS

GREAT INTEREST OF THE AGENTS INVOLVED IN THE VALUE CHAIN OF POLYESTER

Over the course of the second semester of 2017, diverse networking activities with different entities have been developed. Among them:

- ✓ Meeting with NOVAPET, company focused on the formulation and production of PET.
- ✓ Meeting with the Institute of Polymers Science and Technology, part of the Spanish National Research Council (CSIC).
- ✓ Meeting with MORON, manufacturer of textile insoles and, at the same time, generator of textile waste.
- ✓ Meeting with SOEX GROUP, company leader in recycling and trade of used textiles.
- ✓ Meeting with NESTLE Waters, company dedicated to the production of bottled water.
- ✓ Meeting with BRIDGESTONE, manufacturer of tyres.
- ✓ Meeting with NUREL, company focused on the production, commercialisation and design of polymers, particularly polyamides and biopolymers.
- ✓ Meeting with the Department of Chemistry-Physics of the University of the Basque Country (UPV/EHU), Research Group of Macromolecular Chemistry.
- ✓ Meeting with ANTEX, Spanish textile group focused on the world of synthetic yarns.
- ✓ Meeting with TERNUA, manufacturer of high-performance textile garments.
- ✓ Meeting with AZTI-Tecnalia, networking about the projects LIFE-LEMA and LIFE-ECOTEX.

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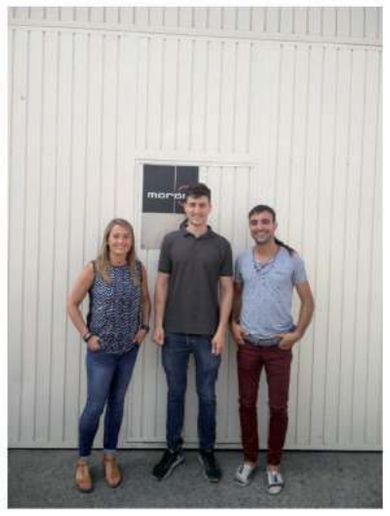
GREAT INTEREST OF THE AGENTS INVOLVED IN THE VALUE CHAIN OF POLYESTER

GAIKER-IK4 & EKOREC & NOVAPET

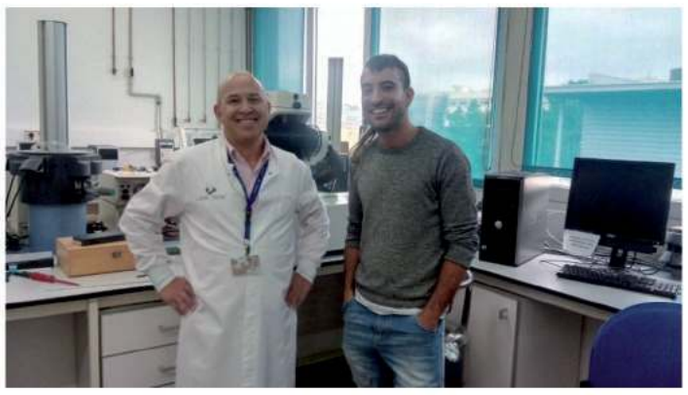
GAIKER-IK4 & CSIC



GAIKER-IK4 & MORON

GAIKER-IK4 & EKOREC & NUREL

GAIKER-IK4 & BRIDGESTONE



GAIKER-IK4 & UPV-EHU

GAIKER-IK4 & AZTI-TECNALIA

GAIKER-IK4 & EKOREC & ANTEX

GAIKER-IK4 & EKOREC & TERNUA

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2nd Monitoring Meeting of the Project LIFE-ECOTEX

Last October 30th, the second Monitoring Meeting of the Project LIFE-ECOTEX took place at the facilities of GAIKER. During the event, the supervisor was informed about the progress of the project, indicating also how the validation of the purified monomer obtained has been started and presenting the preliminary results associated with the production of pellets and textile yarn. The PET from chemical recycling shows similar properties to virgin PET and therefore it is concluded that the achieved results are highly satisfactory. Furthermore, the results associated to the replicability of the technology and the transference of the outcomes to other industrial sectors were highlighted. Particularly, the packaging sector and the automotive sector, have shown interest in treating polyester waste generated in both industries and also in including the resulting products in the manufacturing of other goods and even in products linked to packaging.

Technical Follow-up meeting at BETA – High potential of industrial implementation

The third annual follow-up meeting of the Project LIFE-ECOTEX took place on 15 December 2017 in Oviedo at the facilities of Beta Group. In this meeting, all the partner entities reviewed the advances made until then and defined the tasks to be done for the next phase.

During the session, the partners shared the technical progresses carried out in the last semester in relation to the production of 250kg of BHET and the socio-economic study for the scaling-up of the glycolysis reaction. Furthermore, the networking and communication activities carried out by all the entities were exposed, as well as the agenda, new tasks and forecasts of each partner for the first months of 2018.

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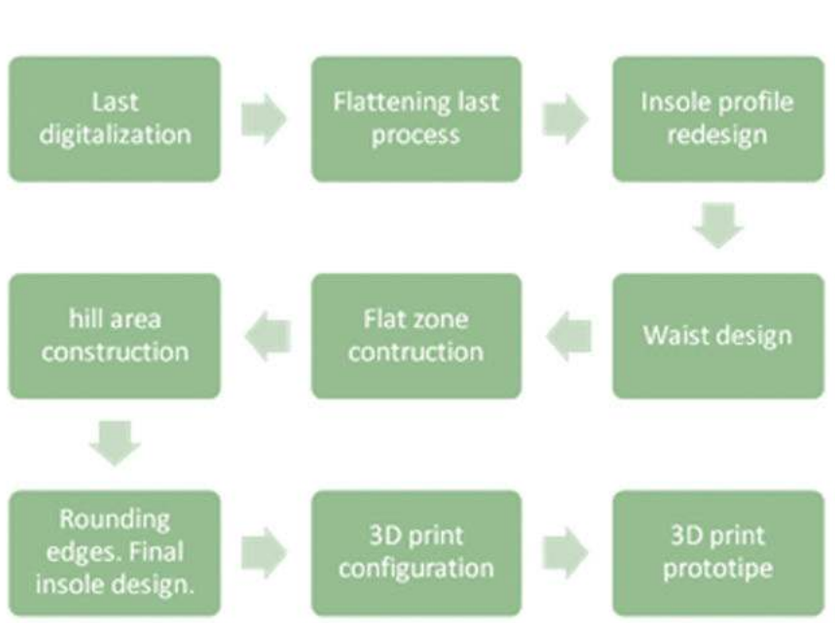
Public tender for the subcontracting of synthesis of PET from the BHET obtained

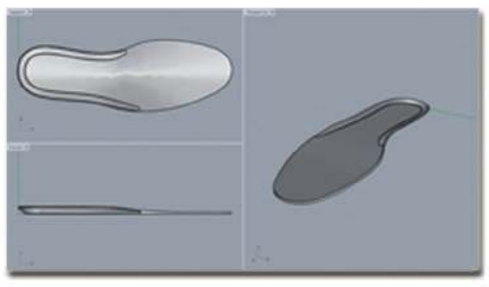
After obtaining over 300kg of BHET and as a part of the tasks B2. New polyester synthesis and polyester staple fibre (PSF) manufacturing pilot experience, the demonstration of the Process BHET2PET will be carried out to get new chemically recycled PET. To that end, GAIKER-IK4 is preparing the bidding document to open the subcontracting tender for that activities in March.

7

Design of the new products manufactured with chemically recycled short polyester fibre

Within the action A4 Design in detail of demonstrative textile prototypes, the design process has been carried out for the prototypes for the insoles, using digital lasts, and for the isolation materials for building, using 3D CAD software and implementing eco-design methodology. In parallel, the physical requirements of the insole and the isolator have been studied to be produced with the recycled polyester fibre. The productive processes have been analysed and parametrised for the previous manufacturing and to be able to foresee possible modifications in the production, due to the use of recycled PET.





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Study of the pre-industrialisation of the Process ECOTEX

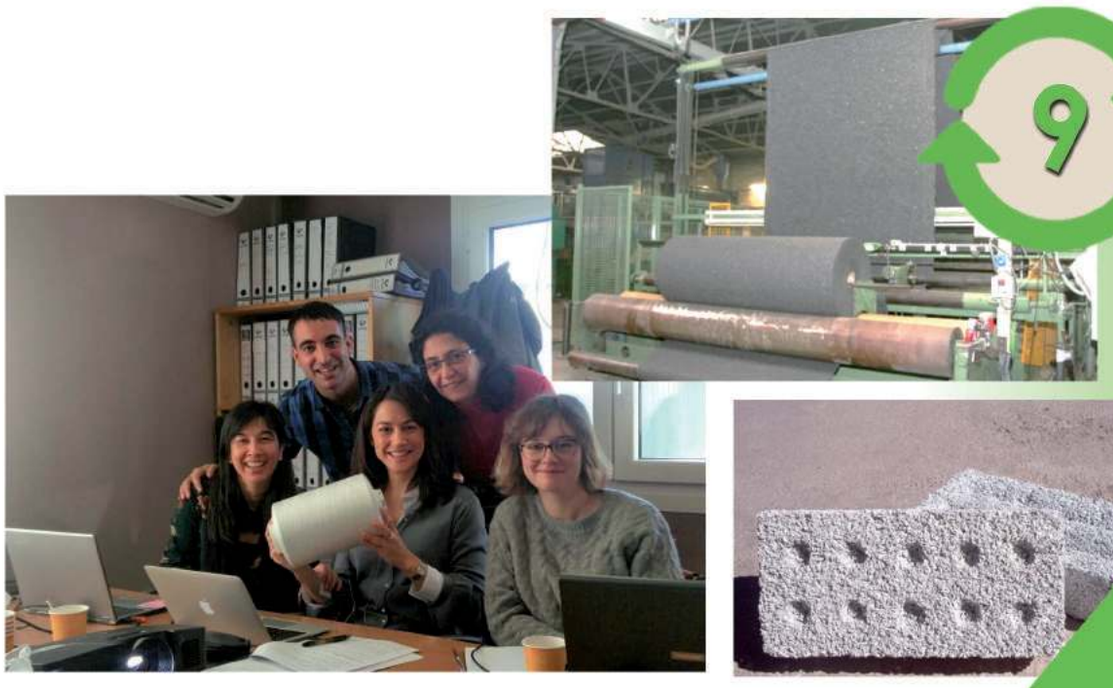
The consortium of the Project LIFE-ECOTEX is studying the possibility to industrialise the chemical recycling process of PET waste through catalytic glycolysis. For that, some critical issues are being assessed, such as the industrial equipment, plant capacity, required investments, waste supply sources and the potential market for the products obtained.

9

Replicability and transferability

In order to achieve a large international impact and increment the environmental and social benefits of the projects, according to the EC policies, a strategy of replicability has been developed and is supported in the following pillars:

- Replication in the footwear sector in some countries at European level.
- Replication using PET wastes from automotive sector and packaging industry.
- Replication through the introduction of new fibres of recycled PET in other sectors: packaging, textile, automotive and building.



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10 Presence in trade fairs

The Project LIFE-ECOTEX has been presented in different types of events by the partners of the project; particularly, CTCR participated in the 2nd edition of Momad Shoes 2017, at IFEMA, the referral trade fair for footwear sector in Spain. There, it exhibited many advances related to sustainability, within the specific area "Sustainable Fashion". In this regard, the eco-innovation was leaded by the Project LIFE-ECOTEX, focused on the possibilities of the circular economy applied to the chemical recycling of polyester. Thus, many visitors from the fashion and footwear sectors, showed great interest in the successes achieved.

CTCR was also present at Futurmoda, the International Trade Fair for Leather, Components and Machinery for Footwear and Leather Goods, on 25 and 26 October at IFA, Fair Institution of Alicante. In the stand, CTCR showed the progress of the Project LIFE-ECOTEX to more than 400 exhibitors: 135 exhibitors focused on leather, 89 on footwear components, 70 on textiles, 64 on soles and heels, 26 on machinery and 16 on chemical products, among others.

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SOCIAL NETWORKS

The LIFE-ECOTEX project currently has a TWITTER profile and LINKEDIN group, both of which are continuously active.

The social networks are used to contribute to the dissemination of the project's developments and results, as well as to stimulate discussion topics and share sector-related news.

twitter

@life_ecotex

Grupo Life-ECOTEX

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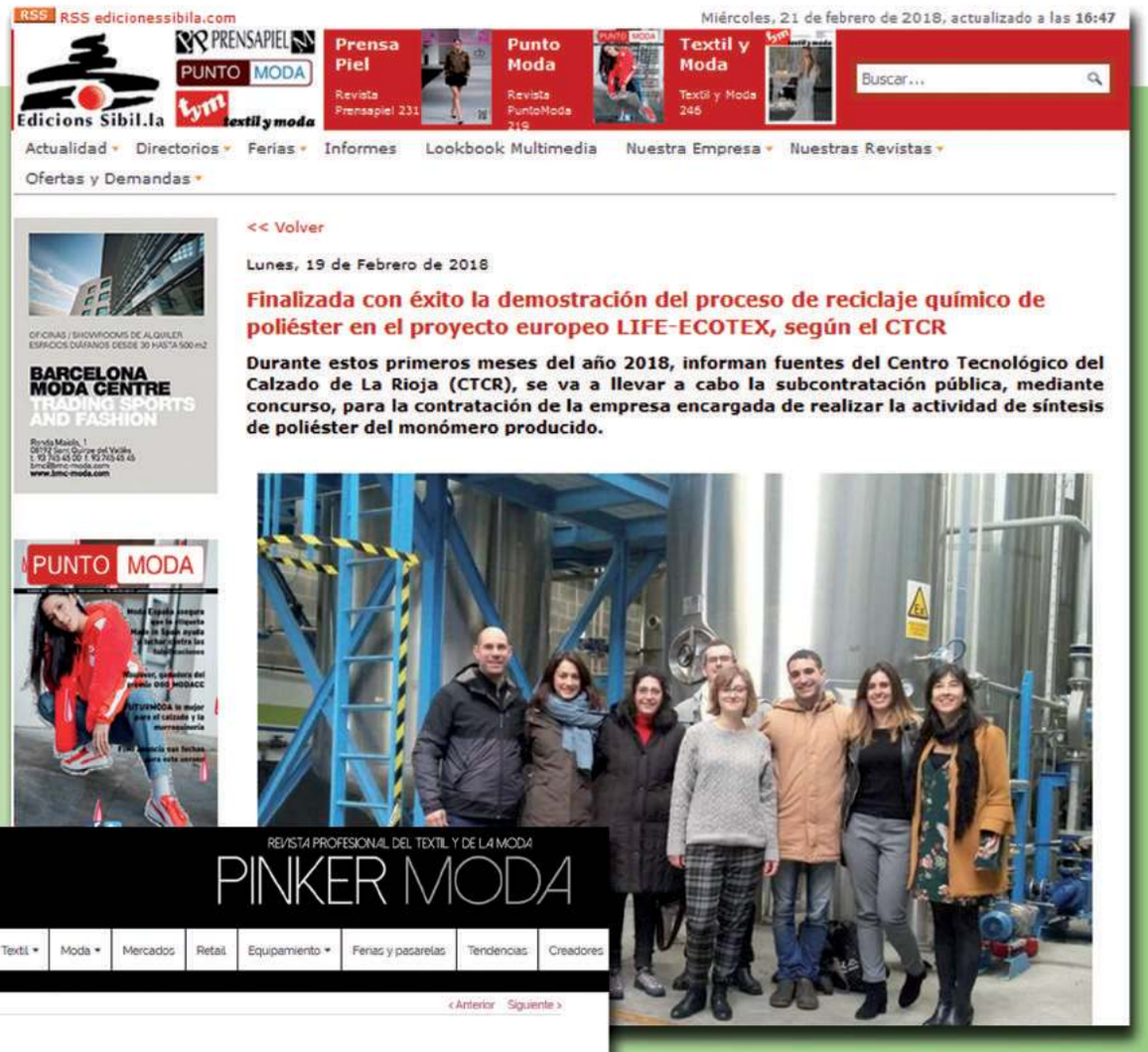
MEDIA IMPACT

Below, a summary of the appearances in media, resulting from the publication of the second press release about the advance of the project. It consists of a selection of the most relevant impacts that are part of the second clipping of the project LIFE-ECOTEX.



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BETA
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