

Start Circles project results

3.2.2021

Vanja Turičnik, Kompetenzzentrum Holz GmbH

Introduction

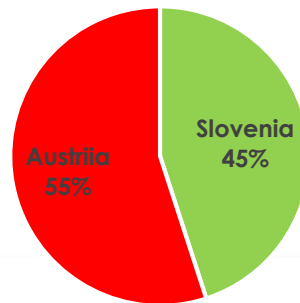
- ▶ Start Circles project focuses on the wood and polymer industry;
- ▶ personal interviews with companies in these areas;
- ▶ transition from a linear to a circular economy;
- ▶ questions based on the Ellen MacArthur Foundation;
- ▶ analysis compares the data between Slovenia and Austria and between the wood and polymer industry in both countries.



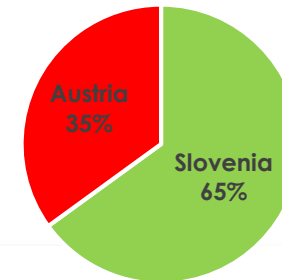
General informations

- The aim of the project partners was to interview 40 companies in the program area;
- 22 interviews with companies in Slovenia;
- 18 interviews with companies in Austria.

Wood industry

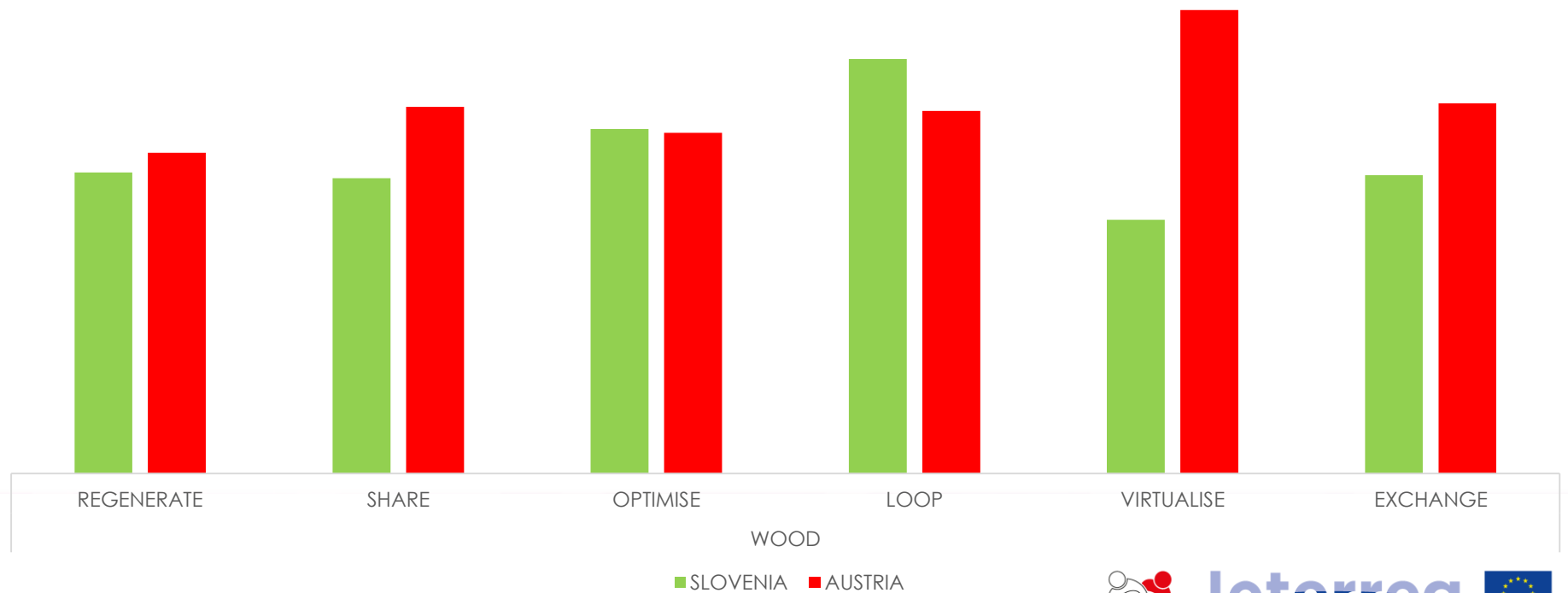


Polymer industry



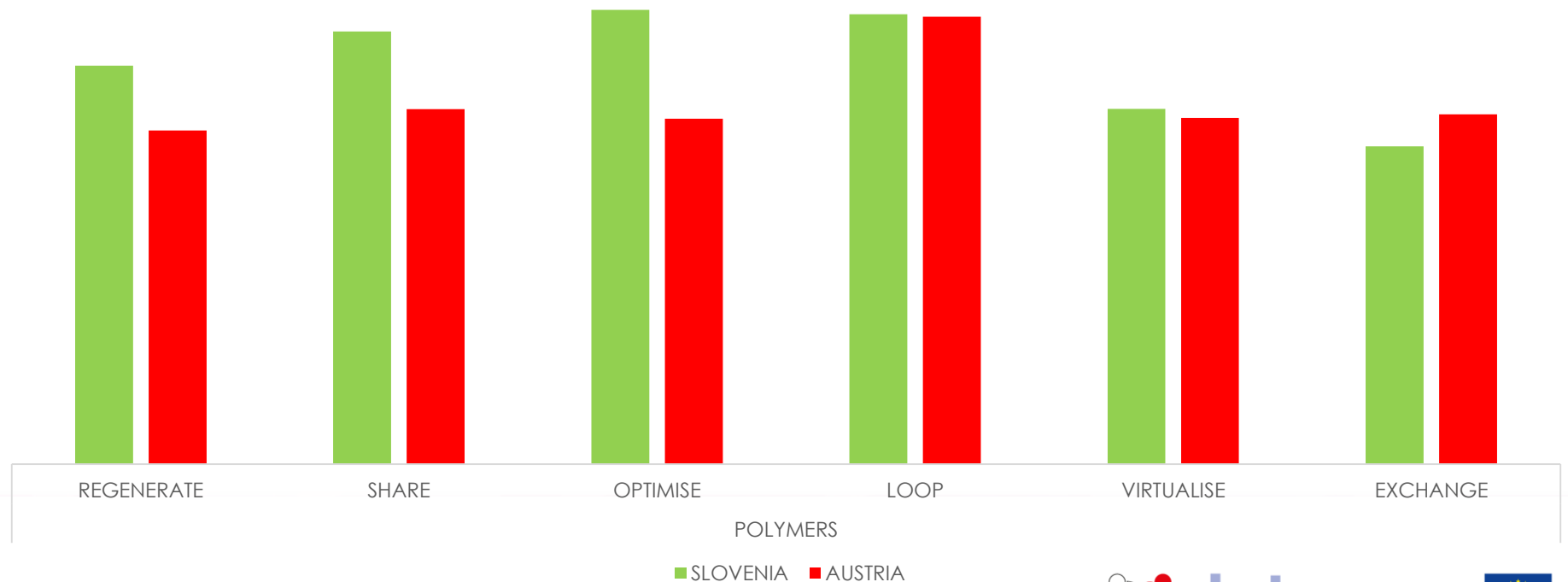
Wood industry

- To much waste in the wood industry, which is still incinerated; only a small part is stored;
- 80-100 % of products in the wood industry in Slovenia are designed to extend their life cycle (with repair); in Austria between 30 and 50 %;



Polymer industry

- Polymer residues (production residues) in Slovenia are reused in a higher proportion than in Austria;
- Up to 80 % of products or their components in the polymer industry in Austria are recovered or refurbished



Cooperation with R&Ds

- New directives – new challenges for companies;
- use of recycled materials – innovations and new technologies to improve recycling processes;
- Regional differences in innovation capacity in the program area SI-AT;
- R&D institutions offer support to SMEs.



R&Ds Slovenia

- University in Ljubljana, Biotechnical faculty, Department of Wood Science and Technology (www.bf.uni-lj.si)
- Slovenian Forestry Institute (www.gozdis.si)
- Pulp and Paper Institute (www.icp-lj.si)
- University in Ljubljana, Faculty of Chemistry and Chemical technology (www.fkkt.uni-lj.si)
- Wood Technology School Maribor (www.lsmmb.si)

R&Ds Austria

- Carinthia University of Applied Sciences (www.fh-kaernten.at)
- Montan University Leoben, Chair of Waste Processing Technology and Waste Management (www.unileoben.ac.at/en/university/chairs/institutes/departments-of-environmental-and-energy-process-engineering/chair-of-waste-processing-technology-and-waste-management)
- Joanneum Research, LIFE – Institute for Climate, Energy and Society (www.joanneum.at/en/life)
- Technical University Graz, Institute of General Management and Organisation (www.tugraz.at/institutes/ufo/home/)
- Technical University Graz, Institute of Bioproducts and Paper Technology (www.tugraz.at/institute/bpti/home/)

Start Circles project results

3.2.2021

Maja Mešl, Faculty of Polymer Technology

Good practice cooperation examples SMEs & R&D

➤ GOAL:

- To create a cross-border, sustainable and long-term innovation network between R&D partners and SMEs in Slovenia and Austria (wood and polymer industry) and strengthening the partnership between SMEs and R&D institutions

➤ HOW?

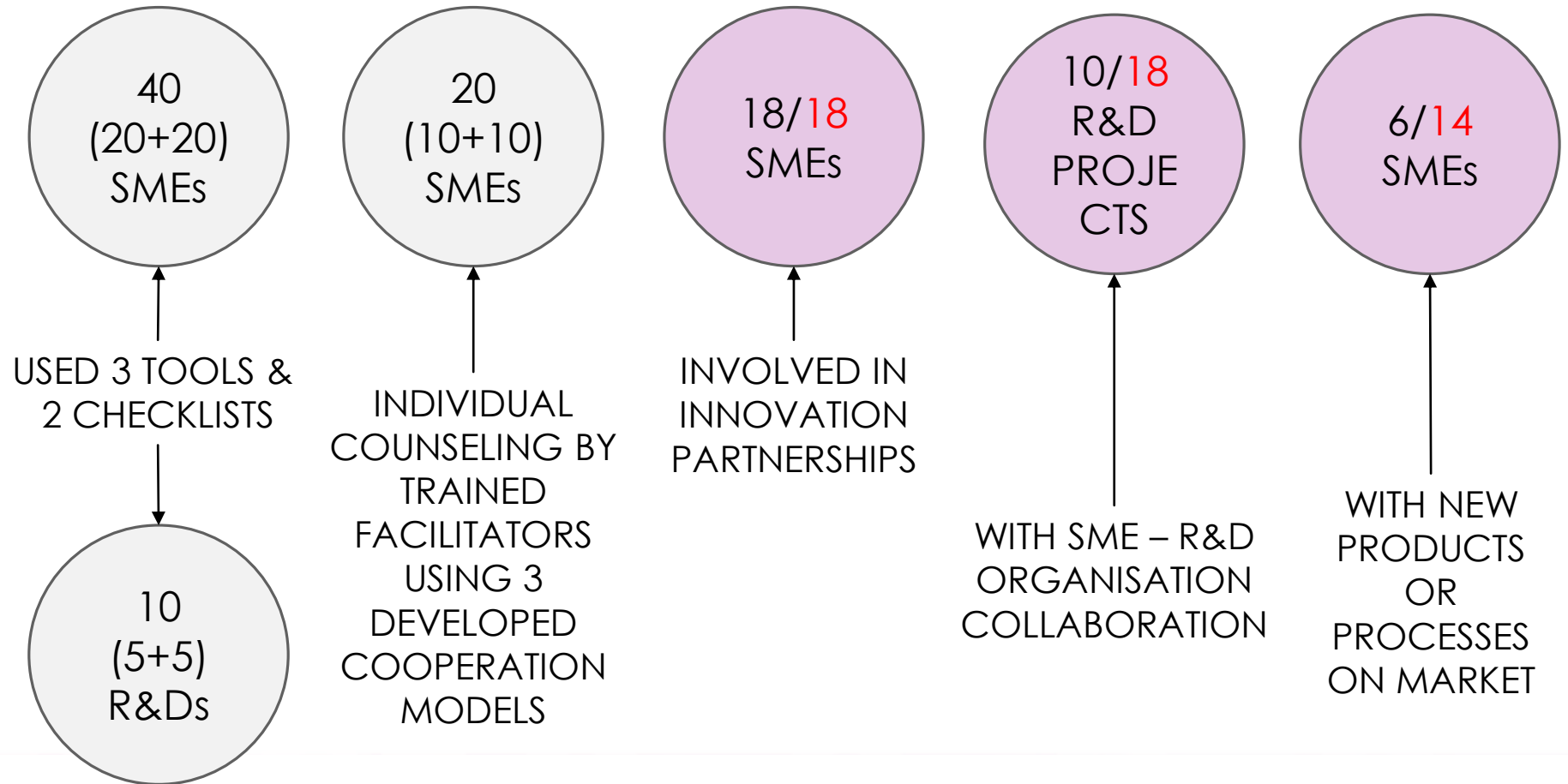
- Implementation and documentation of cross-border good practice cooperation examples between SMEs and R&D institutions.
- Strengthening the capacity of SMEs and R&D partners for successful and long-term cooperation, sustainable innovation and integration into new cross-border value chains / development projects / business models in the circular economy.

Pilot projects

- 21 applications to the tender + 2 project partners
- 16 + 2 pilot projects in progress
- 3 + 3 R&D and 2 SMEs involved



KEY RESULT



Pilot R&D projects in progress



ZIRBENHERZ
Regenerations-Systeme®

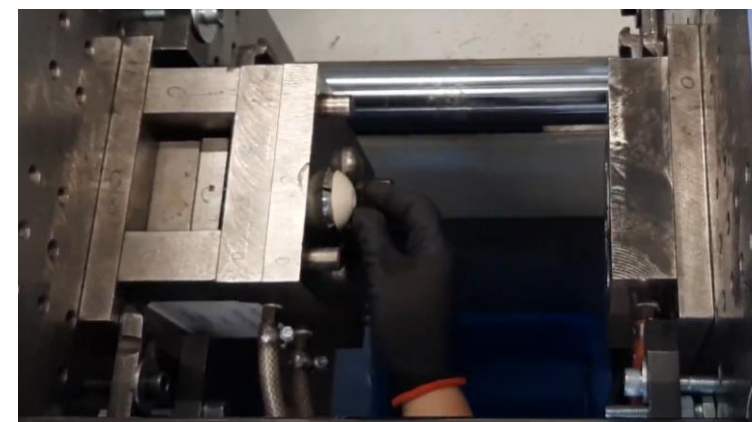
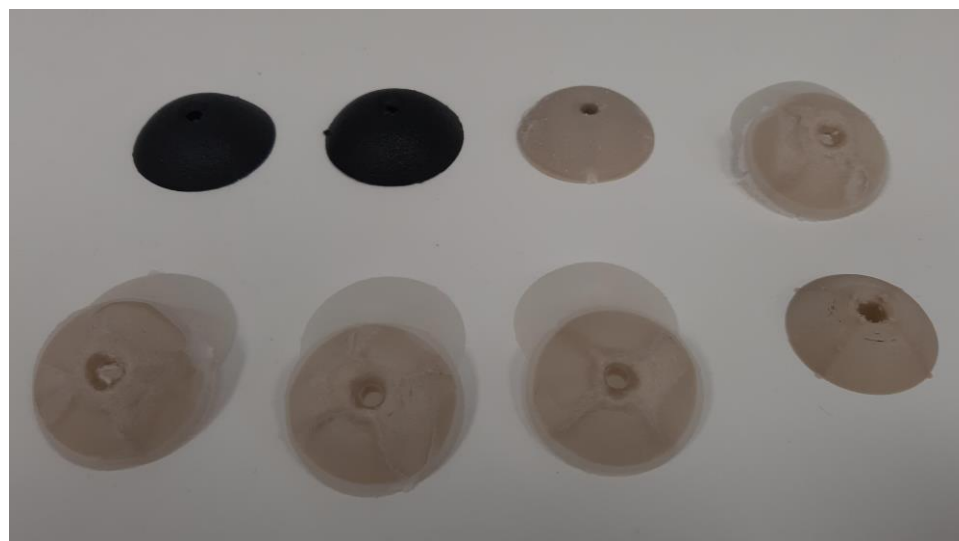


Projects

▀ Hrastplast d.o.o.

Climbing grips from thermoplastic composite with injection moulding technology

Goal: lower environmental impact



Projects

► Azurefilm d.o.o.

Reels for 3D filament from recycled PP and waste paper

Goal: „Green“ packaging. Use of waste PP and paper – lower environmental impact



Projects

► Iskra ISD Plast d.o.o.

Duroplastic waste as a filler for technical polymer materials

Goal: Use of industry waste – lower environmental impact.



Projects



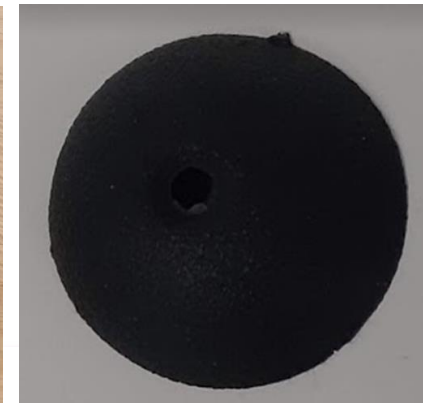
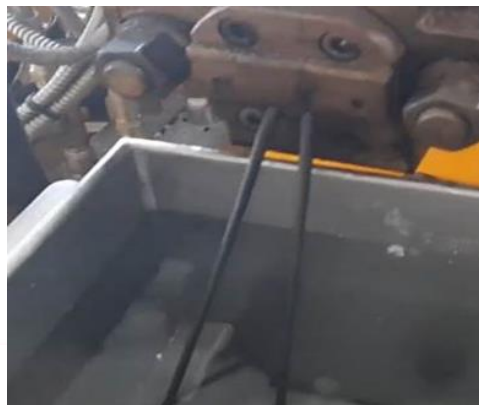
●●●● FTPO
Fakulteta za
tehnologijo polimerov

WOOD
K PLUS

► Limnos d.o.o.

The reuse of mineralized sewage sludge as a filler for thermoplastic composite

Goal: Use of industrial waste – closing the loop. Waste



Projects

► Maar d.o.o.

Biobased packaging – flexible nets for (biodegradable) food packaging

Goal: Use of biobased and biodegradable material for packaging.

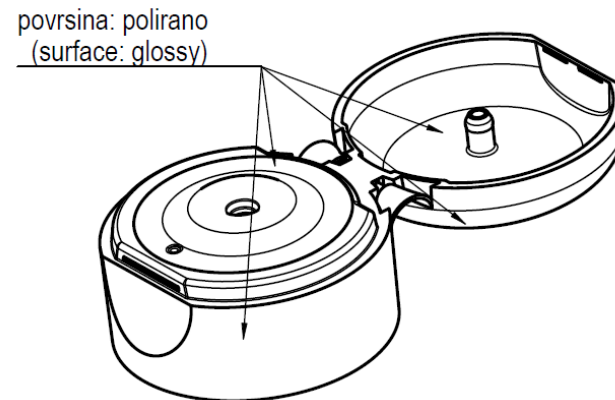


Projects

➡ SIBO GROUR d.o.o.

Improving recyclability of their products – all parts from PE-HD

Goal: Recyclability of their products – lower environmental impact.



Projects



➡ Donar d.o.o.

Use of nano-cellulose in furniture made from waste felt

Goal: Improving thermal and mechanical properties with NCC + LCA analysis of the developed product.



Projects

► Bee Natural s.p.

Development of sustainable packaging for cosmetic creams

Goal: Selection, prototyping and LCA analysis of packaging for their product.



Projects

► Tehnomat Kranj d.o.o.

Spikes for hiking poles from recycled PA

Goal: Using-eco friendly materials for their selected product.



Projects

➔ Flexido d.o.o.

Protective chamber for collaborative robots

Goal: Selection of eco-friendly material.



The picture is symbolic

Projects

➔ M Sora d.d.

Project COMET (custom recycled materials)

Goal: Development of boards made of wooden windows production waste (wood, aluminium, glass, paper)



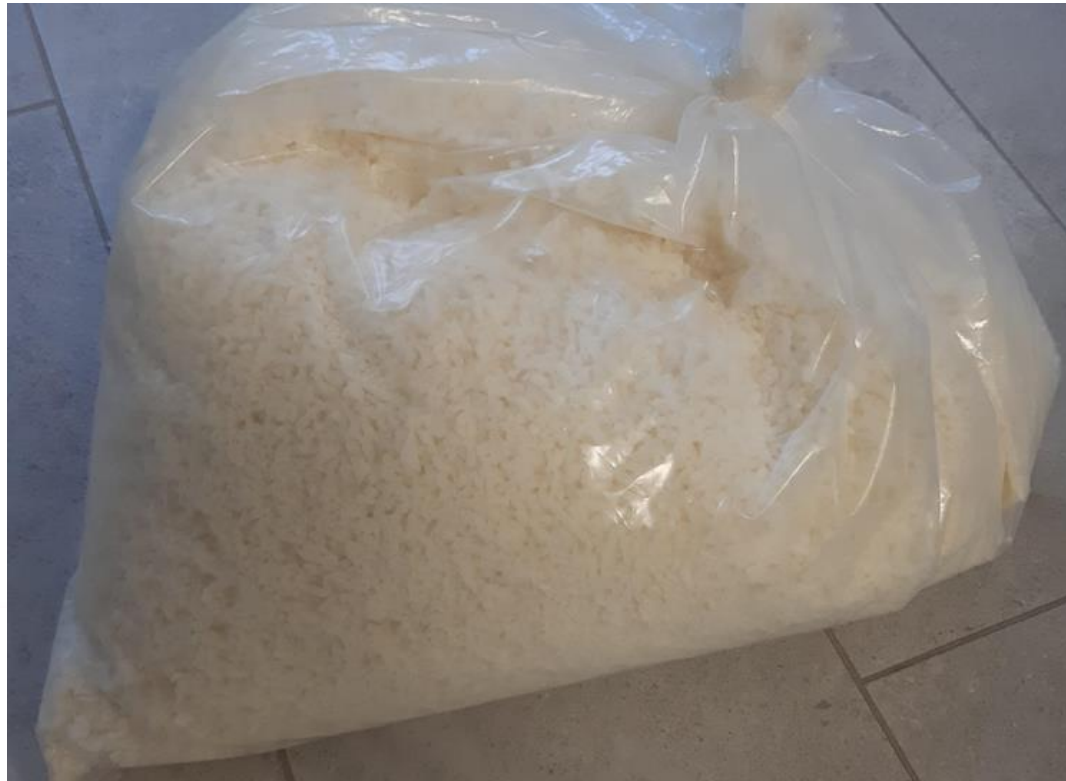
University of Ljubljana
Biotechnical Faculty



Projects

► Elky Matratzenerzeugungs GmbH

Use of waste latex from mattress in thermoplastic matrix

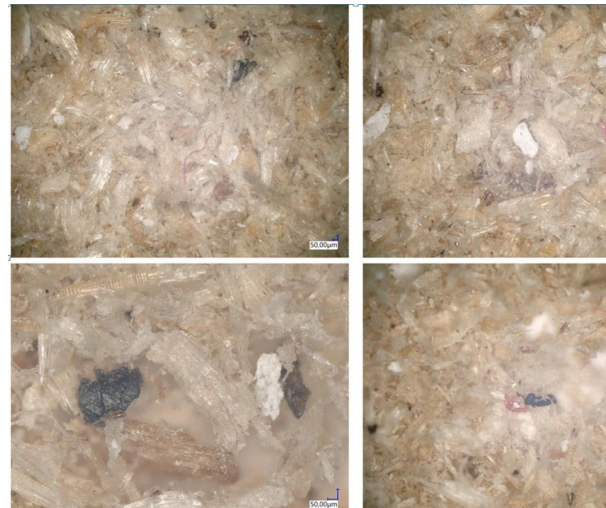


Projects



- ▶ Alples d.d.

Chemical characterisation of production waste from ventilation pipes

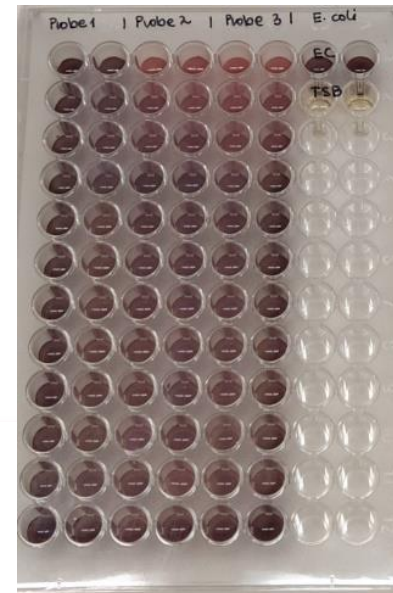
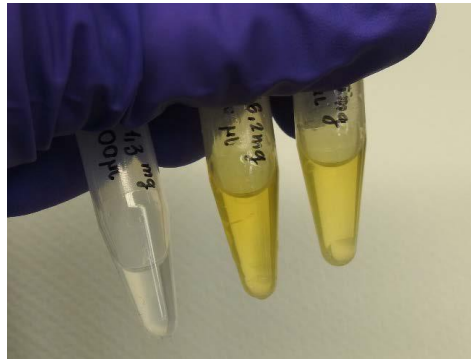


- ▶ Thermal pressing of waste – new boards
- ▶ 3D printing mass

Projects

➤ Zirbenherz GmbH

- Antimicrobial determination of minimal inhibitory and minimal bactericidal/fungicidal concentration of oil samples (*Pinus cembra*)
- Anti-adhesion activity
- Use of extracts for various applications (Surface coatings, cosmetics)
- **Design of an air freshener made from production waste, prototyp**



WOOD
KPLUS



Support program

The aim of this activity is to strengthen the capacity of SMEs and R&D partners for successful and long-term cooperation in the circular economy (Workshops, Counselling)

► Topics:

- Biocomposite and postconsumer recycled products – good practice examples
- Transfer of good practice examples in circular economy – wood industry
- New business model canvas method
- Funding opportunities for SME'S
- Intellectual property and its protection
- Certification of biodegradability
- TUV certification
- Green marketing (design)
- ...

Thank you for your attention

For more information contact:

maja.mesl@ftpo.eu

v.turicnik@wood-kplus.at