



New Plastic Heroes: ForPET

Recycling: Foaming instead of Dreaming

Start-up founders are usually looking for a hot idea. But in ForPET's case, you could call it a foaming idea. The company worked with industry partners to develop a technology for the production of foamed rPET.



Sergey Nikitenko (in the photo) founded the start-up in 2021 with Mikhail Iakobachvili and Dmitrii Rastorguev. © ForPET

Beverage package recycling keeps on posing challenges for the industry. The layers of composite films in particular cannot be cleanly separated from each other. That makes recycling very difficult. Foamed rPET could be the solution. This idea comes from the start-up ForPET. The objective: establishing a genuine circular economy for sustainable plastic products. From sorting to material processing to the production of end use products. The founders are bringing their full plastics and packaging expertise to bear. One of them, Sergey Nikitenko, was interviewed as part of our start-up series New Plastic Heroes.

Kunststoffe: What makes your technology special?

Sergey Nikitenko: Liquid state polycondensation can make recycled material 100 percent food safe and mechanically foam the material. The weight is reduced and the material is made heat resistant using CO₂ and nitrogen. What's more, no adhesives are used in processing to produce end-use products.

Kunststoffe: What are the benefits?

Nikitenko: The resulting monomaterial is in turn 100 percent recyclable. The inks used for printed products are water-based, making them easy to wash out in the recycling process.

Kunststoffe: What sparked the idea?

Nikitenko: Packaging plays a tremendously important role in everyday life. That being said, far too much of these valuable resources are ending up as trash; laminated paper products in particular. Something obviously had to be done about this. Talking to mechanical engineering and plant construction firms in Germany and Austria led to an increasingly clear picture of sensible plant combinations. When NGR brought their novel liquid state polycondensation to market, it was immediately apparent that PET is well suited as a material for true sustainability.

Kunststoffe: Did that work straightaway?

Nikitenko: It took several extended series of tests from the idea to the finished product. Success in producing this new material was ultimately achieved in cooperation with the technology partners NGR and Leistritz.

Kunststoffe: What applications is your rPET intended for?

Nikitenko: Our rPET is a very good substitute for food packaging that uses laminated paper, or for blister packaging that is not made of monomaterial. Both types of packaging are difficult or impossible to recycle. Parcel boxes that need a lot of wood are another possible

Facts on the Start-up

- Name: ForPET
- Founded: April 2021
- Total customers: 3 (+ 4 in validation)
- Number of employees: 65
- Homepage: www.forpet.pro

application. Foamed rPET is also a good substitute for polystyrene.

Kunststoffe: Aside from recyclability, what are the advantages compared to "conventional" rPET?

Nikitenko: Foamed rPET has a considerably lower weight. That reduces transportation costs and emissions. The amount of raw material needed to produce a certain quantity of products is reduced as well. Benefits on the application side include better insulating properties and that printing on the material is easier.

Kunststoffe: Are there any disadvantages?

Nikitenko: Producing mechanically foamed films made of rPET is very difficult. It therefore takes a rather long time to stabilize the operation of a production line. Scaling formulation changes up from the laboratory scale to production is also challenging. This process takes more time. There are no apparent disadvantages from the end product perspective since modern sorting plants are capable of detecting the material as PET.

Kunststoffe: What is ForPET's greatest success to date?

Nikitenko: Obtaining financing is important for any start-up. This has been accomplished. Organization, plant setup, and commissioning were a great success as well.

Kunststoffe: Where are the plants located?

Nikitenko: The first plant commenced operation in Latvia in October 2022. A second plant is now under construction in Carinthia and slated to start operating in the summer of 2023.

Kunststoffe: You were represented at K 2022 with a small exhibition stand. What was that like for you as a young company?

Nikitenko: The interest of many people in our products from day

one made K 2022 a very positive experience. They ranged from students who were amazed by the possibilities of this rPET material to multinational company groups that clearly recognized the benefits for their products.

Kunststoffe: Recycling and sustainability were among the key topics this year. What of that will remain, for example, at K 2025?

Nikitenko: Recycling is only in its infancy today. Hopefully, the mindset will keep changing globally in the direction of increasingly sustainable thought and

action. Maintaining a livable world for future generations is up to us. ■

Interview: Melanie Ehrhardt, editor

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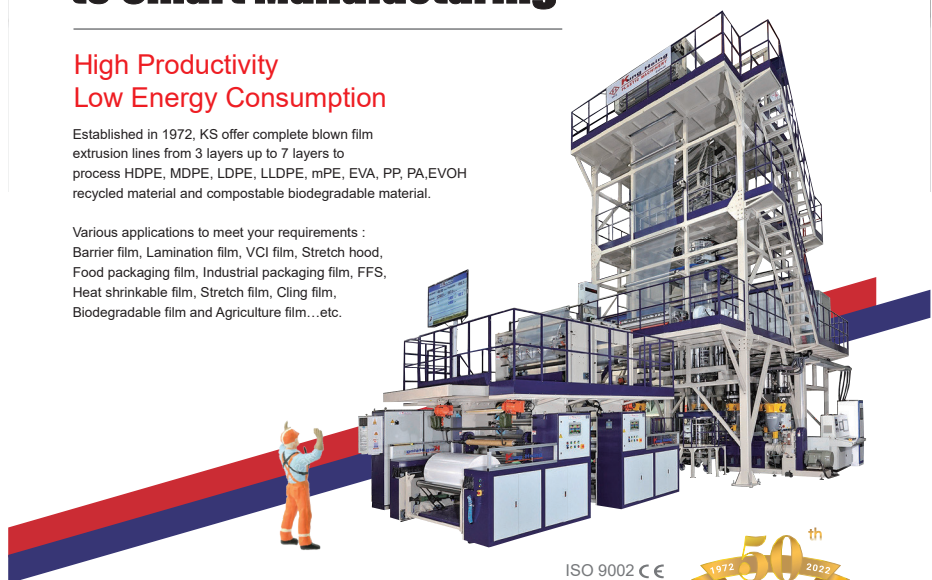
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