

New H 2020 DEMO project in sustainable packaging based on PHA

Navigate, together with its partners, won a European Commission tender under the Horizon 2020 research program. They will be implementing a new generation of sustainable packaging project, which is named BioSupPack. The consortium is formed by 17 European companies and institutions that will develop ecological packaging of the future for food or cosmetics. The basis for the project is the know-how of two Czech entities – NAFIGATE Corporation a.s., and the Brno University of Technology (BUT). The multinational company Unilever and other excellent workplaces in Europe are also members of the consortium.

NAFIGATE Corporation has long been interested in the concept of circular economy – NAFIGATE reuses biological waste, which is being converted into biopolymers and then bioplastics used in various applications – including the production of ecological packaging for food, beverages, cosmetics or household cleaners. "As part of the BioSupPack project, we will be processing and testing new types of waste from food production. We also look for new forms of polymer that are suitable for processing into plastics," said Lenka Mynářová, co-owner of NAFIGATE Corporation. The European Commission allocated 8.8 million euros for the whole project, the Czech participants of the consortium – NAFIGATE Corporation and BUT – received a total of 1.4 million euros. The consortium thus becomes the only alliance of companies and institutions (so-called DEMO project), which will deal with environmentally friendly packaging with the support of the European Commission.

NAFIGATE Corporation is a leading Czech innovation company focusing on biotechnology and nanotechnology. The Hydal technology, which uses various oil wastes to produce bioplastics, poses the flagship in the area of biotechnology.

Replacement of synthetic plastics

The European Union has long been working to solve problems with synthetic plastics, but the advent of bioplastics is hampered by several challenges. Existing recycling systems are built to process conventional plastics, and not all bioplastics are truly environmentally friendly. "The European Commission's assignment was to develop sustainable packaging that would not harm the environment. We have proven that the solution can be our approach to circular economy and how we process food waste," said Lenka Mynářová. As part of the BioSupPack project, the consortium will examine the possibilities of how to effectively recycle next-generation bioplastics and how to digitalize material streams.

The project received the highest possible rating in the evaluation of "excellence" and its contribution to the objectives announced by the European Commission – in both cases a maximum of five points. "We have managed to put together smart brains in Europe. I am glad that our concept of packaging for the future was also evaluated in this way by the European Commission," added Lenka Mynářová. According to her, NAFIGATE Corporation awaits a lot of work in an excellent European team – among

others with such a renowned partner as Unilever. The aim is to develop reliable and strong packaging that will be at least as good as traditional ones, but at the same time as environmentally friendly as possible.

Modern packaging projects also represent a significant economic and business opportunity. The packaging is the largest application segment in the plastics industry. According to the Frost & Sullivan analysts, they accounted for 40 per cent of the industry's total consumption in 2019. According to international evaluations in the field of biotechnology, NAFIGATE shows significant growth and innovation potential and aims to constantly expand its product portfolio.

Other European projects

Over the last 18 months, NAFIGATE Corporation has succeeded with its projects also in other European tenders. Besides the development of new generation packaging, NAFIGATE Corporation also gained two other projects within the Horizon 2020 research program as well as one project each from the Eurostars and ELIIT programs.

The Czech innovation company thus deals, among other things, with the processing of municipal and water management biological waste and their use for the production of new products. For example, the RIMPLAN project (Eurostars program) focuses on the production of sealing elements for electronic devices by injection molding. The goal of the WaysTUP! project (Horizon 2020) is the production of food and feed additives, bioethanol, biological solvents and bioplastics.

In the case of the HOOP project (Horizon 2020), more than twenty entities from ten countries – including NAFIGATE Corporation as a technology partner – offer support to local initiatives that address the conversion of biowaste into biofertilizers, biopolymers and other innovative products. "Success in European programs is a huge encouragement for us. We take them as a recognition of our innovation potential, but also as a proof that a Czech company and a Czech university can succeed in enormous international competition with excellent results," says Lenka Mynářová.