

PRESS RELEASE

Bio-on S.p.A.

Revolution in food packaging. The milk carton goes bio

Researchers at Bio-on and the University of Tampere (Finland) have created the first material to team paper and bioplastic designed for the food packaging of the future. It will also be the only biodegradable material

BOLOGNA Italy - TAMPERE Finland, 16 April 2016 – Imagine a future, very near now, in which cartons for milk, fruit juice and many other foodstuffs will be 100% biodegradable. **Bio-on** today announces a major result achieved with its new collaboration with **Tampere University of Technology Finland**, one of the most important centres in the world for research and innovation in the use of paper and plastic for food packaging. A joint project launched in 2015 has produced for the very first time tetrapak type containers made of a combination of paper and bioplastic, namely the special grade **EC (Extrusion Coating)** of the **Minerv PHA** biopolymer developed by **Bio-on**.

To achieve this extraordinary outcome, researchers at the two laboratories replaced the polyethylene contained in current packaging, maintaining all of its impermeability, and for the first time in history created a material that is totally naturally biodegradable and of renewable origin that can be easily and safely recycled.

The **Minerv PHA Extrusion Coating** project, launched by **Bio-on** at the end of 2015, aims to develop specific, eco-sustainable and, for the first time, fully biodegradable formulations, in order to make laminates with paper without using films, but instead fusing the biopolymer directly onto the paper using an extrusion process, without losing out on the end product's functionality and aesthetic.

Based on **Bio-on's** revolutionary biopolymer, 100% naturally biodegradable and already tested in dozens of applications, from automotive to design to biomedical, **Minerv PHA EC (Extrusion Coating)** is safe and particularly suited for use with food.

*“We are extremely pleased to present this important product created out of the collaboration with **Prof. Jurkka Kuusipalo** from the **Tampere University of Technology Finland**, which has made the highest number of technological developments in the history of food packaging in the food & beverage sector,”* explains **Bio-on S.p.A.** Chairman **Marco Astorri**. *“Together we demonstrate that it is possible to develop new functionalities in the use of **PHAs** biopolymers in dozens of items”.*

“It is a great scientific challenge,” says **Prof. Kuusipalo** of **Tampere University of Technology Finland**, *“to be able to create new products with an eco-sustainable and completely natural material. I have been analysing and testing all the plastics bonded to paper and cardboard for over 20 years. The high interest that the packaging sector is enjoying gives us new goals for a totally eco-sustainable “tomorrow”. The **PHAs** made by Bio-on is very versatile and enables us to achieve performances never seen before. Being able to do this with completely natural products will put us at the cutting-edge of research and development in the coming decades”.*



Bio-on bioplastics are made from renewable plant sources, some of which is waste, with no competition with food supply chains, and are 100% naturally biodegradable. *“We chose to work with Tampere University of Technology Finland because they are very oriented towards industrial production,”* explains Astorri.

The Minerv PHA EC (extrusion coating) industrial research and development project produces polylaminate via extrusion of the molten PHA polymer directly onto the paper or cardboard substrate, with subsequent cooling and consolidation of the plastic film by passing through cooled rollers (an overall process entitled EXTRUSION COATING).

www.bio-on.it

BIO-ON S.p.A.

Bio-On S.p.A., an Italian Intellectual Property Company (IPC), operates in the bioplastic sector conducting applied research and development of modern bio-fermentation technologies in the field of eco-sustainable and completely naturally biodegradable materials. In particular, Bio-On develops industrial applications through the creation of product characterisations, components and plastic items. Since February 2015, Bio-On S.p.A. has also been operating in the development of natural and sustainable chemicals for the future.

Bio-On has developed an exclusive process for the production of a family of polymers called PHAs (polyhydroxyalkanoates) from agricultural waste (including molasses and sugar cane and sugar beet syrups). The bioplastic produced in this way is able to replace the main families of traditional plastics in terms of performance, thermo-mechanical properties and versatility. Bio-On PHA is a bioplastic that can be classified as 100% natural and completely biodegradable: this has been certified by Vincotte and by USDA (United States Department of Agriculture). The Issuer's strategy envisages the marketing of licenses for PHAs production and related ancillary services, the development of R&D (also through new collaborations with universities, research centres and industrial partners), as well as the realisation of industrial plants designed by Bio-On.

The alphanumeric codes for ordinary shares “ON” IT0005056236, for ordinary shares “ON” with bonus share IT0005056228 and for warrants “WARRANT Bio-On 2014-2017” IT0005056210. The minimum unit of trading envisaged by the Italian Stock Exchange is 250 shares.

Company Nomad is EnVent S.p.A.. Banca Finnat Euramerica S.p.A. acts as company specialist.

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Tampere University of Technology Finland

Tampere University of Technology (TUT) conducts research in the fields of technology and architecture and provides higher education based on this research. **An international scientific community** TUT is located in Tampere, the Nordic countries' largest inland city, some 170 km north of the capital Helsinki. TUT's campus in the suburb of Hervanta is a community of 9,200 undergraduate and postgraduate students and close to 1,800 employees. Internationality is an inherent part of all the University's activities. Around 1,500 foreign nationals from more than 60 countries work or pursue studies at TUT. TUT offers its students an opportunity for a broad, cross-disciplinary education. Competent Masters of Science of Technology and Architecture as well as Doctors of Technology and Philosophy graduated from TUT are in high demand among employers. The University combines a strong tradition of research in the fields of natural sciences and engineering with research related to industry and business. Technology is the key to addressing global challenges. **A strong societal impact** TUT generates research knowledge and competence for the benefit of society. The University is a sought-after partner for collaborative research and development projects with business and industry and a fertile breeding ground for innovation and new research- and knowledge-based companies. **Finance** In 2014 the total funding of TUT Foundation, which operates as Tampere University of Technology, was 167 million euros. Close to 50 % of the University's funding was external funding, such as revenue from The Finnish Funding Agency for Technology and Innovation (Tekes), industry, the Academy of Finland and EU projects. **A foundation university** TUT started operating in the form of a foundation in the beginning of 2010. The independence of a foundation university and the proceeds of the 137 million euro foundation capital further promote the development of research and education at TUT.

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