

PRESS RELEASE

Bio-on S.p.A.

**Nanotechnologies and bioplastic to diagnose and combat tumours
Bio-on researchers on the job**

BOLOGNA, 19TH SEPTEMBER 2016 – For the very first time, bioplastic can be used to diagnose and treat tumours thanks to the first patent registered by Bio-on in the nanomedical field, particularly in nanodiagnostics (nano-imaging). Bio-on researchers use nanotechnologies to create **minerv BIOMEDS**: these are revolutionary and innovative nanocapsules in PHAs bioplastic (polyhydroxyalkanoates) capable of simultaneously containing two contrast media: magnetic nanoparticles and gold nanocylinders. These two elements flag up diseased areas of the body, e.g. a tumour mass, using traditional **Nuclear Magnetic Resonance** and the more innovative **Photoacoustic imaging***.

“Using PHA bioplastic is very advantageous,” explains Prof. **Mauro Comes Franchini**, Bio-on Chief **Scientific Advisor**, *“because it is safe for the patient and has no side effects. As an industrial chemist, my main goal is to work with products that are safe for the environment and human health, especially when it comes to biomedical applications. Bio-on bioplastics fully meet these requirements and open up important, unexplored fields for nanotechnologies in medicine - a rapidly growing sector.”*

This technology has a **diagnostic** as well as a **therapeutic** function, given that drugs can be inserted into the nanocapsules, for chemotherapy for example. This will enable **minerv BIOMEDS** nanocapsules to be used in targeted and selective cancer therapies in the future. Combining **Therapeutic** with **Diagnostics** has led the two terms to be fused, thus creating **Theranostics**.

“This versatility makes nanocapsules multifunctional,” explains Prof. **Mauro Comes Franchini**, *“and this dual system will allow clinical theranostic applications in oncology and in neurodegenerative disorders, enabling medical professionals to work safely on patients.”*

The **PHAs bioplastics developed by Bio-on** are made from renewable plant sources with no competition with food supply chains. They are completely eco-sustainable and 100% naturally biodegradable. The research conducted and the patent registered by Bio-on show that they can be used successfully in the nanomedical field precisely because they are biocompatible and safe for human health.

The global market in contrast media alone is dominated by four multinational companies that generated an overall turnover of \$4.3 billion in 2015. According to the most recent estimates, this figure should rise to \$6 billion with 39.5% growth over the next 5 years.

“We are proud to contribute to such an important sector for human health,” says **Bio-on S.p.A. Chairman Marco Astorri**, *“We will continue to do so by extending our direct presence even more in the biomedical and nanomedical sector.”*

***Photoacoustic imaging** is an innovative, revolutionary and non-invasive technique that produces extremely high resolution images of diseased areas of the body. It is highly precise and very safe because it does not use ionising radiation.

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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