



New raw materials for environmentally friendly lubricants

Factsheet: Partners of the “PHAt” project

Together we are strong – this also applies to research. This is why partners from the biotechnology, chemical and lubricant industries are working together in this project to find an environmentally friendly and sustainable solution for thickeners in lubricants. At the same time, the project is closely linked to the BioPlastics network (<https://www.netzwerk-bioplastik.de/en/>), which is also working on the development and marketing of biodegradable products of natural origin based on polyhydroxyalkanoates (PHA). In this way, synergies will be leveraged and long-term research alliances forged. This increases the chances of success in establishing sustainable products in the market.

Fraunhofer Institute for Environmental, Safety and Energy Technology

UMSICHT

Fraunhofer UMSICHT shapes actively the energy revolution as well as the raw material shift. As a pioneer of technological innovation in the areas of energy, processes and products, Fraunhofer UMSICHT promotes a sustainable economy. Therefore, it improves people’s quality of life and boosts the innovation capacity of the economy. As one of 72 institutes and independent institutions of the Fraunhofer-Gesellschaft, Fraunhofer UMSICHT is globally cross-linked and promotes international cooperation. Fraunhofer is the largest organization for applied research in Europe. The Department of Biobased Plastics at Fraunhofer UMSICHT deals with the development of bioplastics along the entire process chain. Starting with polymer chemistry and the development, processing and application of new materials to sample production and material testing – the department’s employees possess the know-how. In the PHAt project they take over the preliminary investigations in the laboratory and specify, together with UnaveraChemLab, the most suitable PHA types. In addition, they manage the technical and scientific part of the research project as well as the dissemination of the results. Website: <https://www.umsicht.fraunhofer.de/en.html>.

Fritzmeier Umwelttechnik GmbH & Co. KG

As a future-oriented company, Fritzmeier Umwelttechnik is bridging the gap between digital farming, crop production and technology towards biological applications of microorganisms in the B2B and B2C sectors. Therefore, the company is the specialist when it comes to “technology for the environment”. Fritzmeier Umwelttechnik supports users with the development of highly innovative products. By application of these products, the highest economic benefit is achieved and ecological aspects are met in every respect. Within the PHAt project, Fritzmeier Umwelttechnik produces the basic materials for the sustainable lubricants and thickeners. Fermentation processes of biological raw materials result in the desired polymers. According to the requirements of the project partners, the properties of polyhydroxyalkanoates used as starting material are customized. Consequently, biodegradable materials of natural origin are supposed to be produced meeting strict sustainability criteria. Website: <http://fritzmeier-umwelttechnik.com/?lang=en>.



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FUCHS Schmierstoffe GmbH

For more than 85 years, FUCHS has been developing and producing high-quality lubricants and related specialties – for almost all fields of application and industries. With 58 companies and more than 5,000 employees worldwide, the FUCHS Group is independently the leading supplier of lubricants. The product range includes more than 10,000 products and related services in six core categories: Automotive Lubricants, Industrial Lubricants, Greases, Metalworking Lubricants, Lubricants for Special Applications, Services. Among the more than 100,000 customers worldwide are automotive suppliers and OEMs, companies in the areas of mechanical engineering, metal processing, mining engineering, aerospace, energy, construction, transportation, agriculture, forestry, steel and metal, cement, casting and forging, but also food and glass manufacturers – and many others. FUCHS was one of the first companies to launch biodegradable lubricants in the 1970s. Since then, FUCHS is investing in the research and development of such lubricants. As a result, a number of projects have been successfully completed in recent years addressing new raw materials based on renewable resources for use in lubricants. Within the PHAt project, FUCHS Schmierstoffe GmbH in cooperation with FUCHS LUBRITECH GmbH takes over the lubricant formulation and the corresponding application tests. Website:

<https://www.fuchs.com/en/>.

UnaveraChemLab GmbH

UnaveraChemLab is a manufacturer of processing and research chemicals. The company provides extensive experience in the production of organic chemicals, pharmaceutical agents and their intermediates, also on an industrial scale. Therefore, UnaveraChemLab is GMP certified. Custom synthesis as well as the development of new products and the requisite manufacturing processes are another important pillar of the company.

Multi-purpose facilities made of enamel with glass construction combined with the necessary periphery are available for versatile operations. Further, a well-developed analytic system for strict quality assurance of raw materials as well as the intermediate and finished products is present according to the requirements of the stringent system of GMP production with regard to quality assurance and quality control.

The company was founded in 1982 by Dr. Hasso v. Zychlinski in Mittenwald. Together with its sister company Aaron Chemistry GmbH, Unavera appears today as a company group. However, the development of new products in laboratory-scale is located by Aaron Chemistry. It is the perfect complement to each other: development on a small scale at Aaron Chemistry and based on that the scale-up of the synthesis up to industrial size at Unavera. A worldwide customer base is supplied.

Besides chemical synthesis, services such as purification/refinement or filling of products from external production into customer-specific special containers are also offered. Here, a strict quality control also brings security to the customer.



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After all, the group acts as a provider of raw material of merchandise due to its good global network. Website: <http://www.unavera.de/page/unavera/en/home>.

Boilerplate for press releases

The „PHAt“ project

The PHAt project aims at the investigation of new natural and preferably biodegradable raw materials for use in technical lubricants and solid film lubricants. Especially, the project focusses on the development of environmentally friendly thickeners. The research consortium comprises expertise from industry and academia. They address the question whether potentially biodegradable polymers based on nature-derived material, so called polyhydroxyalkanoates (PHA), are suitable as thickeners. Thus, they can be used as an alternative to petroleum-based products in the future. The project is being funded by the Federal Ministry of Education and Research with approx. 1.25 million euros for three years.

<https://phat-projekt.de/en>

Project partners: Fraunhofer UMSICHT, Fritzmeier Umwelttechnik GmbH & Co. KG, FUCHS SCHMIERSTOFFE GmbH in cooperation with FUCHS LUBRITECH GmbH, UnaveraChemLab GmbH

Industrielle Biotechnologie Bayern Netzwerk GmbH

The Industrielle Biotechnologie Bayern Netzwerk GmbH (IBB Netzwerk GmbH) is a network and service organization in the field of industrial biotechnology and sustainable economics. The aim is to catalyze the implementation of valuable scientific knowledge in these fields into innovative, marketable products as well as processes. As a subcontractor, IBB Netzwerk GmbH is responsible for the dissemination of the results of the project. This is achieved by a project website, updates in social media, newsletters and press releases. Furthermore, the organization of project meetings is supported. The company is located in Munich. Further information can be found at: <https://www.ibbnetzwerk-gmbh.com/en>

Press releases

Please find all press releases and further information at: <https://phat-projekt.de/press/?lang=en>

Contact

Industrielle Biotechnologie Bayern Netzwerk GmbH
Dipl.-Biol. Katrin Härtling-Tindl
Fürstenrieder Strasse 279a
81377 München
E-Mail: info@ibbnetzwerk-gmbh.com
Phone: +49 89 74 120-370
Fax: +49 89 74 120-378