



New raw materials for environmentally friendly lubricants

Factsheet: Application fields for products from the "PHAt" project

The aim of the PHAt project is to develop innovative and environmentally compatible additives for the lubricant industry. The targeted products are nature-based and biodegradable thickeners and binders. Thickeners are usually added to liquids to increase their viscosity. Binders, on the other hand, have the property of creating chemical bondings at the phase boundaries of substances, thus influencing, for example, cohesion or friction. The research and development work of the partners in the PHAt project concentrates mainly on the use of such thickeners and binders in lubricants and solid film lubricants respectively, but their use in other fields of application is certainly possible.

Lubricants

In general, lubricants serve to reduce friction and wear. They can also contribute to cooling, are used as sealing agents or protect against corrosion. The basis for a lubricant is always a base oil to which various additives are added depending on the application. An example of such additives are thickeners. The dosage of the thickener is specifically adapted to the desired application. Especially for outdoor applications it is advantageous if the thickeners are bio-based and biodegradable in order to improve the environmental compatibility of the lubricant used. This is one goal of the PHAt project.

Solid film lubricants

Solid film lubricants and other dry lubricants prevent wear and optimize frictional properties. Solid film lubricants are used, for example, on door panels, cover panels or leather seats in cars to avoid disturbing noises such as squeaking and creaking during driving. The special property of solid film lubricants is that they form a thin, dry sliding layer that reduces friction and wear on abutting surfaces. Solid film lubricants are often based on petroleum-based raw materials such as binders, solvents and various additives. Another goal of the PHAt project is to find an environmentally compatible alternative for the binders.

Thinking ahead...

Even if the PHAt project partners adapt the new materials to the needs of the lubricant industry, their results also open up new application possibilities for other industries. Thickeners and binders are not only used in the lubricant industry, of course, but are also added to many other products, such as cosmetics, paints and varnishes, cleaning agents, adhesives or in the construction industry. In some cases, other partners (from the BioPlastics network, see also the factsheet "Partners of the 'PHAt' project") are already working on the alternative use of polyhydroxyalkanoates as additives in adhesives: <https://www.ibbnetzwerk-gmbh.com/de/service/pressebereich/pm-25042017-phb-klebstoffe/>.

This opens up new possibilities to other areas of application for bio-based and biodegradable thickeners and binders. Here, synergy effects can be used for future developments, so that further innovations can be expected.



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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>

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