

## PRESS RELEASE

### **BRAIN and FUCHS Europe in partnership to produce lubricants from renewable raw materials**

Zwingenberg and Mannheim, September 24, 2014: Biotechnology company BRAIN AG and FUCHS Europe Schmierstoffe GmbH, the largest operating company of the FUCHS PETROLUB SE Group, today announce a partnership involving the biotechnological production of lubricant additives from renewable resources. Throughout the previous year, this successful partnership was a part of the Federal Ministry of Education and Research (BMBF) strategic alliance, ZeroCarbFP. The program partners have thus far been able to reach all milestones ahead of schedule. The synthesis of the first lubricant additives on a kilogram scale was achieved by BRAIN and the first additive is currently in performance engineering development at Fuchs. Further syntheses are either already underway or are in the planning stages. The two partners are therefore focusing this successful partnership on the field of biogenous raw materials.

Modern lubricants are highly developed design elements present in all machinery, as well as many mechanical applications essential for every

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day life. The efficiency and ever increasing technical requirements of machinery and components have led industrial partners FUCHS and BRAIN to synthesise new additives, thus continuously optimising the composition of the lubricants. With regards to sustainability and biodegradability, the petroleum-based raw materials traditionally used for the synthesis of additives are often inferior to biologically engineered ingredients.

As part of the strategic alliance ZeroCarbFP (FKZ: 031A217), enzymatic synthesis processes for the production of high quality lubricant additives from biogenic raw materials and waste streams are developed. In this case, waste streams can be used as both a nutrient for the enzyme production and as a raw material for the manufacturing of target products. The basic materials used are edible fats and oils, animal fats, residues from biodiesel production (for example glycerol, fatty acids and fatty acid methyl ester), lignocellulose and a variety of other industrial by-products and waste streams. In this context, the first milestones were achieved at an early stage and so lubricant formulation experiments using the new raw materials could begin ahead of schedule. The first lubricants with the newly synthesised additives from sustainable raw materials are already in the application development stage at FUCHS.

"In the field of lubricant applications, there is high demand for resources produced using non-toxic and biodegradable additives and functionalised base fluids," says Dipl.-Phys. Rolf Luther, Head of Advanced Development for the FUCHS Group. "Through the implementation of the programme, Fuchs hopes, in partnership with BRAIN, to generate new access routes to different raw materials in order to achieve a stable, economically reliable supply. In addition, the strategic alliance ZeroCarbFP offers us the chance to evaluate a wide range of raw materials for additives and functionalised base fluids that are currently not technically available and have not yet been considered."

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Dr. Jürgen Eck, Chief Technology Officer at BRAIN AG adds, "The combination of highly diverse enzymes of microbial origin from our BioArchive, alongside our extensive technology portfolio of production strains and process development has allowed us to synthesise two lubricant components from sustainable sources of raw materials more quickly than anticipated. We are very pleased that the first lubricants have already been produced at Fuchs and are now in the application development stage."

## About BRAIN

BRAIN AG is an industrial "white" biotech company which discovers and develops novel bioactive natural compounds and proprietary enzymes for its partners and customers in the chemical and pharmaceutical industries, as well as the food and cosmetics industries. With its unique approach to the discovery and production of new biological compounds and biocatalysts, the company achieves creative solutions by harnessing nature's untapped biodiversity. Its success is built on its proprietary BioArchive comprising millions of genes, proteins and metabolic pathways from microbial isolates and metagenome libraries. Since its foundation in 1993, BRAIN has entered into over 80 strategic collaborations with nearly all the relevant companies within the chemical industry as e.g. BASF, Ciba, Clariant, Evonik, DSM, Genencor, Henkel, Nutrinova, RWE, Sandoz, Schering, Südzucker and Symrise, to name but a few. Currently, BRAIN employs 116 highly skilled personnel.

For their groundbreaking industrial biotechnology activities for a sustainable „biologisation of the chemical industry" using nature's toolbox for industrial processes, BRAIN with its CEO Dr. Holger Zinke received the "Deutschen Umweltpreis 2008" of the "Deutsche Bundesstiftung Umwelt", DBU.

[www.brain-biotech.de](http://www.brain-biotech.de)

## About FUCHS EUROPE SCHMIERSTOFFE

The company, founded in 1931 as RUDOLF FUCHS, is based in Mannheim and is a 100% subsidiary of FUCHS PETROLUB SE. With 3773 employees (as of 31.12.2013) across 49 operating companies, FUCHS PETROLUB SE is the world's largest independent lubricant manufacturer. FUCHS EUROPE SCHMIERSTOFFE GmbH manufactures lubricants and related specialised substances at its plants in Mannheim and Kiel, with approximately 750 employees. FUCHS has a level of specialisation far above the industrial average, as well as a high rate of innovation. The product line includes over a thousand lubricants and related specialised products for all applications and industries.

With a powerful network of sales representatives, application engineers and trading partners, FUCHS is especially close to its customers, allowing for quick and flexible reactions to requests and problems. The FUCHS companies have already worked for many years on the development and successful market introduction of biodegradable and cheap ecotoxicologically beneficial lubricants and functional fluids. They are now aiming to improve environmental performance and maximise the use of renewable resources.

[www.fuchs-europe.de](http://www.fuchs-europe.de)

## Images:



Biotechnological production of oils starting from renewable resources or industrial waste streams.

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Industry oils as additives for a successful economy.

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