

PRESS RELEASE

PRESS RELEASESeptember 18, 2015 || Seite 1 | 3

Engine mounts made from dandelions

At the International Motor Show IAA in Frankfurt, ContiTech presents promising research results for mounting elements based on the so-called »Taraxagum«, a natural rubber extracted from dandelions. Together with Continental and since 2013, scientists of the Fraunhofer Institute for Molecular Biology and Applied Ecology IME and the Institute of Biology and Biotechnology of Plants (IBBP) at the University of Münster have been exploring how dandelions could be used in a sustainable way as an alternative source of rubber for the rubber processing industry. In the context of this project, Continental Reifen GmbH has already successfully tested car tire prototypes.

ContiTech Vibration Control developers are now testing if natural rubber made from dandelions might also be used to reduce engine vibrations. At the IAA ContiTech presents first and promising research findings for a possible application in mounting elements in vehicles. The natural rubber is supposed to adapt the elements to different applications in gearbox and engine mounts and at the same time make the parts durable. They bear static loads, insulate the structure-borne sound, limit the movement of the engine, and prevent it from tearing off in the event of an accident. They also damp vibrations and impacts that come from the roads. »The demands on engine mounts are completely different to those on tires. For example, we have to cope with heavy dynamic loads at high temperatures. This means that the focus of our developments is different to that of our tire colleagues,« says Dr. Anna Misiun, who leads the research activities of the project at ContiTech. Regardless of the different products for which dandelion rubber might be used, it always implies considerable environmental benefits.

Better CO₂ balance of the raw material, greater independence from market fluctuations

Professor Dirk Prüfer and Dr. Christian Schulze Gronover of the Fraunhofer IME and the IBBP: »The plant is extremely resilient, able to grow in moderate climates and even in soil that is not suited for the cultivation of food and feed crops. Thus, there is no need for transportation from tropical countries. This improves the CO₂ balance of the raw material considerably.« Moreover, the greater independence from traditional raw materials with sometimes highly fluctuating market prices also offers advantages for the industry.

The development of an environmentally and resource friendly production process for natural rubber on an industrial scale is the overarching objective of the collaboration of the scientists from Continental and Fraunhofer IME. This objective has already come a lot closer with the development of a laboratory-scale pilot plant for the extraction of

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natural rubber from the roots of the Russian dandelion – and with the production of corresponding tire prototypes. In tests under summer and winter conditions, those tires performed just as well as tires made with rubber tree caoutchouc. For their achievements, the scientists involved were awarded with a Joseph-von-Fraunhofer Prize 2015th. Now, the production is to be scaled up so that it finally works for industrial use, measured in tons. With that, in rubber production, the «blowball» develops to an ecologically and economically very attractive alternative to the tropical rubber tree. However, it will still take several years until industrial production can start. »First, the homework has to be done: The plant needs to be further optimized. For the highest possible rubber yield, for sowing, planting and rubber extraction on a large scale,« say the two scientists.

PRESS RELEASESeptember 18, 2015 || Seite 2 | 3

About Fraunhofer IME

The Fraunhofer Institute for Molecular Biology and Applied Ecology IME conducts research in the field of applied life sciences from a molecular level to entire ecosystems, in the areas of pharmacy, medicine, chemistry, agriculture, as well as environmental and consumer protection. Our mission is the development and use of novel technologies for diagnosis and therapy of human and animal diseases as well as the protection of crop plants and food sources.

The IME's interdisciplinary organization features laboratories with state-of-the-art infrastructure, including GMP production facilities and complex facilities for environmental simulations, allowing a wide spectrum of research and development services in the divisions of Molecular Biology and Applied Ecology. We aim at taking innovative products closer towards the market, develop enabling technologies and provide scientific services to partners from academic institutions and industry.

The Fraunhofer IME has approximately 600 employees working at its laboratories in Aachen, Schmallenberg, Münster, Gießen, Hamburg, Frankfurt and its subsidiary research centers in the USA and in Chile. It enjoys close ties with the Institute of Molecular Biotechnology at RWTH Aachen University, the Department of Biotechnology of Plants at the University Münster, the Department of Applied Entomology at the University Gießen and the Institute for Clinical Pharmacology at the Goethe University Frankfurt.

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PRESS RELEASE

September 18, 2015 || Seite 3 | 3



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(ContiTech engine mount Taraxagum)

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