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OZ-16: Continental presents Taraxagum™ auto-tires at Wenden City Hall

Natural rubber from dandelion - a promising alternative

Fraunhofer-IME dandelion rubber plant at the Zoz Technology Center in operation since 2015

Wenden/Olpe, Germany

The Continental Tires Germany GmbH from Hannover attended the accompanying exhibition of OZ-16, the 9th International | German-Japanese Symposium on Nanostructures [1] from March 6-8, presenting their tire brand Taraxagum™, representing auto-tires made with rubber from dandelion. A lecture to this topic was contributed by Dr. Carla Recker [2], Head of Expertfield Materials Chemistry at Continental and by Prof. Dr. Dirk Pruefer [3] from the Fraunhofer Institute for Molecular Biology and Applied Ecology - IME and the Institute of Biology and Biotechnology at the Westphalia Wilhelms University of Muenster. The symposium on schedule this year was held in Germany, thus for the 5th time at the Wenden Town Hall.



OZ-16, Continental-Expo f.l.t.r: Prof. Thomas Klassen, Prof. Wolfgang Kaysser, Dr. Carla Recker, Prof. Zoz

OZ-16, sessions: Prof. Zoz und Prof. Dirk Prüfer

OZ-16 excursion to ZTC: Prof. Zoz and Dr. Carla Recker

For the extraction of the rubber from the dandelion roots that is processed at the Zoz Technology Center (ZTC) at Olpe, Zoz provides its processing technology expertise and Fraunhofer its process-engineering expertise. At ZTC, also the "Helmholtz HZG Hydrogen Technology Centre Olpe" is located, where HZG, based at Geesthacht/Germany particularly works on the manufacturing of complex metal hydrides for the storage of hydrogen in solid state absorber systems.

On Monday, March 7, the first excursion of OZ-16 headed out for ZTC, however the "dandelion plant", for confidentiality reasons, could not be shown to the attendees from 17

countries. The excursion was guided by Prof. Dr. Thomas Klassen, Head of Materials Technology at the Helmholtz-Centre Geesthacht (HZG), the Director of the HZG, Prof. Dr. Wolfgang Kaysser and by Dr. Carla Recker.



background:

The conventional cultivation of natural rubber is carried out for many decades by utilizing the rubber tree (*Hevea brasiliensis*) mainly in the so-called "rubber belt" up to 30 degrees north and south of the Equator. Challenges are the continuously increasing demand of rubber processing industries such as the tire industry as well as and partly strongly fluctuating rubber prices on the world's commodity exchanges. Important to know is, that newly planted rubber trees only after 7-10 years are bringing up a first return [4].

The Russian dandelion, representing the basis for the to even greater profitability and robustness grown and bred Taraxagum™-dandelion, on the contrary is growing relatively weather-independent in central and northern European climates and can be stated agrarian undemanding. This also allows growing nearby tire production plants, of which Continental operates more than 20 in the world. The significant reduction of to date unavoidable long transportation routes, automatically a significantly improved CO2 balance would result. Under the Taraxagum™-project, both, the plant breeding as well as the technical processing chain are highly innovative.

In 2015, the Dandelion Rubber Extraction Facility was set up at the Zoz Technology Center at Olpe/Germany for Fraunhofer IME, where it is operated in the project network of Zoz and Fraunhofer. In five to ten years, Continental wants to be able to produce tires with natural rubber from dandelion roots commercially. The tire-experts from Hannover/Germany pursue the long-term goal of achieving a more sustainable tire production and being more independent from traditional sources of raw materials [5].

The Fraunhofer scientists have managed together with Continental as the tire manufacturer, to increase the rubber yield of the so far more as weeds considered Crop massively, so that a comparable yield to the rubber tree is achievable. For their research on Russian dandelion as well as for the application development for tires, Prof. Pruefer and Dr. Schulze-Gronover from Fraunhofer IME and Dr. Recker received the Joseph-von-Fraunhofer Award 2015 [6].

references:

- [1] www.zoz.de
- [2] C. Recker, A. Topp: Sustainable Tire Materials; Proceedings OZ-16, 9th International | German-Japanese Symposium on Nanostructures, (2016).
- [3] D. Pruefer: Forisomes as smart biomaterial in microscale and nanoscale devices; Proceedings OZ-16, 9th International | German-Japanese Symposium on Nanostructures, (2016).
- [4] Chemie.de/news/153235 # 12.06.2015 # Naturkautschuk aus Löwenzahn
- [5] www.taraxagum.de
- [6] www.fraunhofer.de

On the website www.zoz.de you can find a [photogallery](#) with all pictures of OZ-16.