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PBAT: A versatile material for biodegradable and compostable packaging

PBAT (polybutyrate adipate terephthalate) is a biodegradable random copolymer. The co-polyester of adipic acid, 1,4-butanediol and dimethyl terephthalate is available commercially as resin and as compound with PLA or starch. Today, the building blocks are made from fossil resources, with some manufacturers having plans to switch to renewable resources. As a “drop-in” polymer, PBAT resembles LDPE in its properties. Global annual production capacities are currently around 100,000 tons. Typical applications are packaging (e.g. plastic films and bottles), coatings (e.g. of paper and cardboard) and foam. A major advantage of PBAT is its compostability, in contrast to polylactic acid (PLA), where industrial fermentation conditions (60°C) are necessary. The cost of PBAT is between those of PLA and PHA. In this keynote lecture, properties of PBAT and its compounds will be presented, alongside application examples and an outlook into the future.

Biography

Maximilian Lackner has earned his PhD in 2003 and his habilitation in 2009 from Vienna University of Technology. He has held Several Senior Leadership positions in the Polymer Industry in Austria and China. He has Founded 5 companies, amongst them one for Antimicrobial Polymers and one in the area of Bioplastics, Lackner Ventures & Consulting GmbH. This company collaborates with JinHui Zhaolong, one of the largest PBAT manufacturers. His research interests include PHA and PBAT. Lackner Ventures & Consulting GmbH runs a research project to produce PHB from CO₂ and sunlight using cyanobacteria. He has authored more than 100 scientific articles. He teaches Materials Science at the University of Applied Sciences FH Technikum Wien.

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