Processing of problematic waste plastic PLA by low-temperature pyrolysis

Development status

Phase 3

Technology validation and implementing it in real environment. Testing the technology outside of the laboratory and its adjustment to external conditions.

IP protection status

know how

Partnering strategy

Co-development, Collaboration

Challenge

The efficient disposal of waste PLA, which is produced from starch and the resulting polylactic acid, is an unsolved technological problem. The advantage of PLA products should be their biodegradability, but unfortunately this is not the case in practice. PLA is not routinely compostable, hardly degrades in nature and forms microplastics and cannot be recycled like other plastics. At the moment it is part of both plastic and municipal waste.

Description

We offer the use of our developed test equipment for the processing of waste plastic PLA (starch - polylactic acid), which enables technological input tests for the efficient disposal of this non-degradable, problematic waste in an energy-efficient way. We have developed a working sample (test rig) for the conversion of waste PLA and mixtures of municipal waste with PLA. This device provides practically usable process parameters, process mass and energy balances, and data on thermal treatment products and their use value. The treatment of this waste produces oil as a source of chemicals (solvents, pharmaceuticals), solid carbonaceous residue and gas. The results of the solution can be further used for the processing of other non-degradable plastics or plastic mixtures.

Commercial opportunity

Waste recycling - processing of waste plastic PLA.

Institution

The Institute of Rock Structure and Mechanics of the Czech Academy of Sciences