

REFOAM - Recycling of waste-derived mattresses foam through sensor-based characterization and pyrolysis

Initiative: Zirkularität mit recycelten und biogenen Rohstoffen

Ausschreibung: Kooperationsprojekte

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Laufzeit: 4 Jahre

Waste-derived mattress foam offers a significant potential for resource recovery, therefore the project REFOAM provides a solution based on a sensor-based characterization and sorting technique of waste-derived mattress foam to chemically recycle foam material. Additionally, the resource recovery of latex foam via pyrolysis will be investigated from laboratory scale to technical scale in cooperation with industrial partners. With a holistic approach, it is intended to characterize the waste material and all products of the pyrolysis process (char, oil and gas) to recover bulk chemicals from pyrolysis oils, pigments or metal residues from the pyrolysis char, as well as gaseous compounds for synthesis or energetic use. The technological aims of this project are (i) demonstrating an innovative combination of machine learning, sensor-based sorting and chemical recycling via pyrolysis, and (ii) establishing recycling processes for mattress foams on an industrial scale and demonstrating the circular use of mattress foam.

Projektbeteiligte

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