

Studien-, Seminar- oder Masterarbeit

On the recyclability of high-performance composite structures

Description

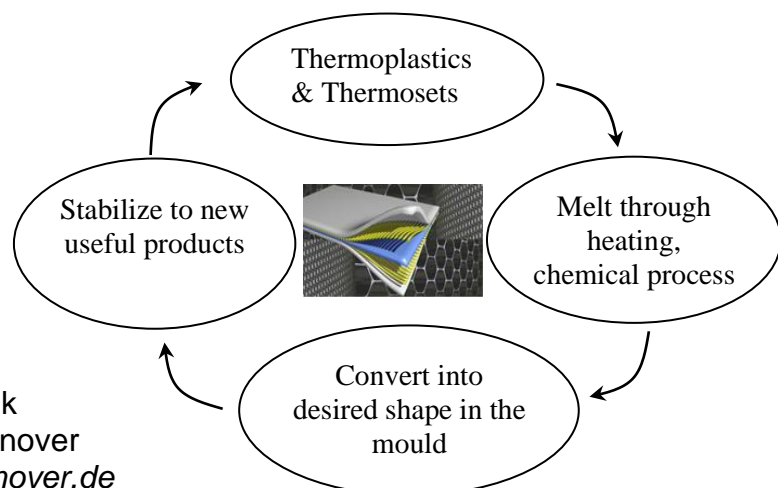
The rapid rise in the applications of fiber-reinforced polymer matrix composites is creating a waste recycling challenge. The composites show a high added value due to the cost of the raw material and the technology involved in its development, which deserves attention for its possible recycling, leading to a closed-loop economy. Continuous fiber-reinforced thermoplastics (FRTPs) are generally considered to be more recyclable than thermosets and, therefore, will result in less environmental pollution. There is limited information on the recycling of continuous fiber-reinforced thermoplastics and thermosets. To this end, a critical review of the current technologies for recovering carbon fibers and/or the polymers and re-manufacturing FRPs needs to be explored in detail. New research opportunities in developing novel recycling techniques for thermoplastic and thermoset FRPs have to be outlined in this work.

Requirements

Good language skills
Basic understanding on composites

Outline

Extensive literature review
Summarizing the observations
Proposing new frameworks for recycling
Proposing creative solution



Betreuer:

Dr.-Ing. Sven Scheffler
Dr. Anilkumar P M Nair
Institut für Statik und Dynamik
Appelstrasse 9A, 30167 Hannover
Contact: a.nair@isd.uni-hannover.de