Recyclability – an ill-defined engineering concept?

Metrics, influencing parameters, mechanisms and engineering

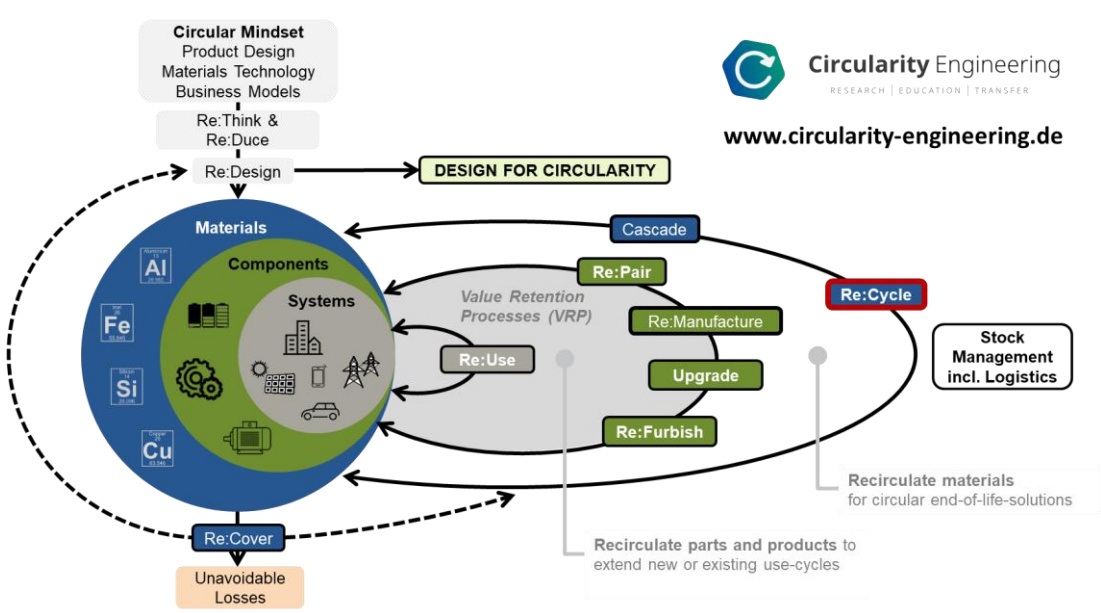
Experimental student work (SP, BA, MP, MA)*

Recommendet for: M.Sc. SSE,

Recycling is the last option of value-retention in the technosphere of a circular economy. Recycling is hereby defined by the produced secondary materials having the same quality as the initial primary material. While many researchers and companies focus on recycling or factually downcycling processes, the ability of a material to be recycled, the so-called “recyclability” is not well investigated yet.

This thesis will summarize the existing research on recyclability to create a useful umbrella concept and define research- as well as research-practice-gaps as guidance for future circularity engineering research at INATECH. Special focus will lie on:

- Metrics to measure the recyclability of materials, components and products
- Influencing parameters of the recyclability of materials
- Mechanisms how material properties are reset during recycling
- Understanding and quantifying loss mechanisms of quality and quantity in todays downcycling and how to potentially prevent this
- The influence of engineering on recyclability of products, components and materials



Starts: As soon as possible

Timeframe: According to examination regulations

More topics on request!

* Forschungspraktikum = FP, Vertiefungspraktikum = VP, Study Project = SP, Bachelor Project = BA, Master Project = MP, Master Thesis = MA

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