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Altri autori (Persone)	TurriStefano
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Nota di contenuto	Introduction, Context, and Motivations of a Circular Economy for Composite Materials -- The FiberEUse Demand-Driven, Cross-Sectorial, Circular Economy Approach -- Disassembly of large composite-rich installations -- Smart composite mechanical demanufacturing processes -- Thermal demanufacturing processes for long fibers recovery -- Styrene-free liquid resins for composite reformulation -- Fiber resizing, compounding and validation -- Additive manufacturing of recycled composites -- Composite Finishing for Reuse.-Composite repair and remanufacturing -- Co-design of creative products embedding recycled fibers -- Modular Car Design for Reuse -- Product Re-design Guidelines -- Cloud-based platform for the circular value-chain -- Use case 1: mechanical recycling of short fibers -- Use case 2: thermal recycling of long fibers -- Use case 3:

modular car parts disassembly and remanufacturing -- Material Library System for circular economy -- New business models and logistical considerations for composites re-use -- Economic and risk assessment of new circular economy business models -- Impact of policy actions on the deployment of the circular value-chain for composites.

Sommario/riassunto

This open access book provides an overview of the work undertaken within the FiberEUse project, which developed solutions enhancing the profitability of composite recycling and reuse in value-added products, with a cross-sectorial approach. Glass and carbon fiber reinforced polymers, or composites, are increasingly used as structural materials in many manufacturing sectors like transport, constructions and energy due to their better lightweight and corrosion resistance compared to metals. However, composite recycling is still a challenge since no significant added value in the recycling and reprocessing of composites is demonstrated. FiberEUse developed innovative solutions and business models towards sustainable Circular Economy solutions for post-use composite-made products. Three strategies are presented, namely mechanical recycling of short fibers, thermal recycling of long fibers and modular car parts design for sustainable disassembly and remanufacturing. The validation of the FiberEUse approach within eight industrial demonstrators shows the potentials towards new Circular Economy value-chains for composite materials.
