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AVAILABLE TOOLS AND METHODOLOGIES FOR SUSTAINABILITY ASSESSMENT IN PRODUCTION

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Abstract

The need for a paradigm shift toward a more circular, sustainable, and resilient economic model led to several attempts to better integrate sustainability metrics into the design and optimization phases of industrial processes. The specific focus, the reach, and means of application depend on the adopted tool and methodology. The goal of this paper is to discuss how the sustainability framework in the SMART-Pro project was created and to display how broad is the set of possible instruments that a company could choose from to promote a more sustainable and optimized business management, spanning from specific aspects of a process, the entire company, or the overall value chain up to the scale of industrial symbiosis contexts. All references have been characterized by taking a holistic approach to system analysis and relying on different criteria to stress complementarities, gaps and overlaps in areas of intervention.

Key words: smart production, sustainable production, sustainability metrics, system thinking

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