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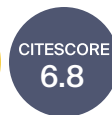
Decision Support Systems and Knowledge Management for Sustainable Engineering

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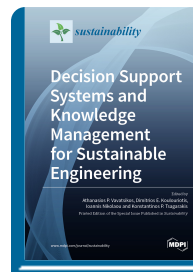Ioannis Nikolaou
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Modern engineering approaches focus on the design and operation of systems and products in a way that allows for the sustainable use of resources. Sustainable engineering aims to provide frameworks that ensure development without compromising the quality of the natural environment and the ability of future generations to meet their own needs. In this context, decision making processes must be enriched by approaches and tools that allow decision makers to consider a wide range of sustainable options. Recently, great progress has been taking place in the fields of operation research and management science, where intelligent quantitative analysis, statistics, and prediction analytics are employed in a variety of interdisciplinary research areas, aiming to assist policy makers and managers with the consideration of a variety of sustainable options. This Special Issue consists of a 17-paper collection with published approaches and models that are designed to give answers for environmental impact and sustainability assessment, risk and knowledge management assessment, lifecycle assessment and energy management. Five papers are dedicated to advances in different literature review topics. The remaining papers deal with a variety of engineering approaches to address decision making which involves: mulricriteria decision analysis, ecological footprint and biocapacity estimations, fuzzy prediction models, advanced statistical analysis, simulation, systems dynamics model, task ontology and integration definition function modeling.

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