

Metrics and Environmental Sustainability

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ABSTRACT

Sustainable products support product innovation in industrial supply chains that can lead to improved global competitiveness for manufacturers. Sustainability combines product environmental, societal, and economic areas. This linkage drives improved performance in these areas and lends to an improved future for the general public, the environment, and industry. Scientific analysis of manufacturing processes and products is necessary to ensure progress toward sustainability. Inputs (energy and material resources and use), outputs (materials in products, wastes) and products (performance of function, reliability, and life of service) are major aspects that require sustainable metrics. Tools to evaluate and measure the sustainability of products are essential. This session seeks to provide a venue for cross-functional system thinking in the area of metrics for sustainability. Papers will be considered that detail efforts on novel metrics that enable access to markets where inappropriate regulations, aimed at achieving sustainability or environmental goals, could act as trade barriers to manufacturers. Descriptions of efforts on models or frameworks that serve to evaluate the sustainability of manufactured products based on the sustainability of the materials and processes used to create the products are especially of interest. Innovative technologies that support sustainability throughout the life cycle of products are also of interest. In addition, papers on the development and validation of information standards, reference materials, or reference data to support sustainability across products and organizations or to demonstrate compliance with sustainability regulations will be considered.