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## Simulation based sustainable manufacturing system design with cost reduction achievements [PDF] from seu.ac.lk

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**Description** In this study was proposed to adopt the eco-friendly design principles to minimize the environmental impact and reduce the costs of manufacturing and assembly to identify and analyzing the application of the eco-friendly design to the redesign of a nozzle component by focusing in the textile and other manufacturing industry. In product aspects, there is a requirement to move beyond the traditional approach. Life cycle analysis concept consists of a need to model and attain optimized technological developments and improve process planning to minimise energy and resource utilizations, without reducing the product quality or the manufacturing capacity. Product life cycle analysis is a systematic approach and integration of environmental aspects during the early stages of product development that can be considered very important in order to improve overall environmental performance of the product. It enables to understand the total product life-cycle results, including inventive techniques for products, processes and systems required in production. The merits and demerits of the factors, which influencing the application of eco friendly design were also examined. The nozzle manufacturing organisation developed a longitudinal case study on eco- friendly design. The procedures of eco-friendly design, the application and usage of eco-design recommendations considered during the component redesign were discussed in detail. A cost of production was reduced to a greater extent in relation to the use of copper, varying materials and ABS in its composition. Hazardous materials were systematically avoided and minimized consumption of energy ...

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