

Product design flow integrated TRIZ, eco-efficiency and QFD

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Abstract

In recent years, the motivation toward creating a more sustainable society has led to the realization that greening products and production processes alone are not sufficient. Sustainable solutions that encourage more holistic thinking and strategic design planning are now receiving increased research interests. Applying structured method such as TRIZ (Theory of Inventive Problem Solving) into eco-design had been proven to be effectiveness and efficiency in product innovation. The 7 eco-efficiency elements announced by WBCSD (World Business Council for Sustainable Development) are guidelines of eco-design for organizations to reduce their environment impacts and have been successfully applied in many areas. QFD (Quality Function Deployment), a technique used to transform customer requirements to technical requirements, has been applied in the analysis of pre-design stage for product innovation. In this paper, integrating TRIZ, Eco-efficiency and QFD, an eco-innovation design flow considered customer requirements is proposed. This flow could help managers improve products' eco-efficiency, break the contradictions between product parameters, and upgrade customer satisfaction in early product planning stage.

Keyword : TRIZ, Eco-efficiency, Quality Function Deployment