

CONCEPT SELECTION METHODOLOGY DEVELOPMENT

The concept design compasses the totality of the product artifact. It is the summary of the product systems to achieve the targeted performance. There are two phases of the concept design. The first phase is the development of the candidate solutions based on the product design specifications and the second phase is the evaluation of concepts and selection of the best concept. There are various tools suggested for the selection of the concept such as the Pugh chart. However there is need to develop a suitable concepts selection methodology that not only effectively deals with the establishment of the evaluation criterion but also leads to the development of a concept rating method which gives a robust, cost effective and competitively marketable design. The research work seeks to improve the concept selection methodologies suggested by Pugh [1] and Mistree & Muster [2].

The scope of work envisages the development of a suitable merit model for the evaluation of concept in the form of a suitable objective function with constraints followed by selection of the best concept using evolutionary algorithms.

[1] Pugh S, 'Concept selection - a method that works', Proceedings of the international Conference on Engineering Design, Rome, (9-13, March, 1981).

[2] Mistree, F and Muster, D, 'Design harmonization: a computer based approach for the design in the systems age' in Gero,JS (ed) Optimisation in Computer aided design, North Holland, New York (1985).

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