

Systematization of product conceptual redesign for the environment

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Abstract: This article presents a methodology of redesign for the environment (RePMA), giving emphasis to the phase of modifications in the product original conception, henceforth called conceptual redesign. According to RePMA, the process of redesign consists of four phases: informational, conceptual, preliminary and detailed redesign. The progress of this process relies on the level of redesign adopted, which, according to RePMA, can be: original, adaptive or parametric. This article presents conceptual redesign, the first phase of the original redesign, in which attempts are made in order to modify the product original conception. Such changes can happen in the functional structure or in the solution principles. These forms of modification are the ones that allow more fundamental changes, such as functional grouping, inclusion or exclusion of functions, change in solution principles, among others. RePMA presents a set of guidelines so as to include the ecological concern in methods that support the activities of conceptual redesign such as: functional synthesis, morphologic matrix and Pugh evaluation matrix. The application of conceptual redesign for the improvement of an electric coffee-machine is presented at the end of this article.

Keywords: design for the environment, product redesign, design methodology

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