Multifactor correlation analysis and modeling for product low carbon design

She Dong Ren, author

Abstrak

ABSTRACT
Low carbon design is a process of contradiction coordination, which involves multiple factors and necessitates abundantdesign knowledge and rules. We proposed the method that integrated the case based reasoning CBR method and extension theory to achieve low carbo design for products. In this paper, our work is on analyzing the design constraints, and carbon design for products. In this paper, our work is on analyzing the design contraints, and constructing the parameters modeling for representation of product cases. Firstly, we discussed the correlation among factors, and mapped the requirement onto the detailed physical structure. Secondly, we integrated the improved activitybased costing and carbon method and the indirect calculation method to estimate the carbon footprint and cost of each phase in product life cycle. We adopted the basic element model to represent the product cases and used the dependent function to discriminate the extent of compliance with the requirement. In final, the applicability of proposed method was demonstrated through a case study of a screw air compressor.