

Applying TRIZ to the motorbike helmet an innovative design study

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ABSTRACT

Due to the fact that Taiwan is small in landscape area geographically and large in population demographically and urban design and management is not fully implemented effectively, the motorcycle usage rate is increasing yearly. As the number of motorcycle increases, so are the motorcycle accident and the motorcycle mortality rate in the accident. In order to protect the motorcycle rider safety, helmet becomes the basic precaution. Presently the research of functionality and practicality on the helmet is not much, it is crucial to improve the functionality of the helmet so that to facilitate the usage of helmet for the rider. The aim of this research is to design and improve the functionality of helmet for the motorcycle rider. Using the REEVU MSX1 helmet as an object for improvement, one can enhance the safety for the rider to travel during the night under the rear view function being improved with the manually operated mechanism affixed in the back of the helmet and the installation of the wind powered LED on the sides of helmet. The improvement is generated through the using of TRIZ and the universal design standard. The conceptual design is mocked up for the product study. The research design and improve a new helmet product. First expand all the possibilities of the helmet related features systematically through the mind mapping. It is done to search the product research direction, and then a patent search analysis is used to determine the patent scope, followed by the functional analysis and solve the contradiction with TRIZ invention principles and the universal design. Finally the evolution potential is used as a projection of the possible future helmet.

Keywords : Mind mapping、 patent search、 TRIZ、 universal design

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