

Product Form Bionic Design Based on Eye Tracking Data: A Case Study of Desk Lamp

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Abstract : In order to reduce the ambiguity and uncertainty of product form bionic design, a product form bionic design method based on eye tracking is proposed. The eye-tracking experiment is designed to calculate the average time ranking of the specific parts of the bionic shape that the subjects are looking at. Key bionic shape is explored through the experiment and then applied to a desk lamp bionic design. During the design case, FAHP (Fuzzy Analytic Hierachy Process) and SD (Semantic Differential) method are firstly used to identify consumer emotional perception model toward desk lamp before product design. Through investigating different desk lamp design elements and consumer views, the form design factors on the desk lamp product are reflected and all design schemes are sequenced after caculation. Desk lamp form bionic design method is combined the key bionic shape extracted from eye-tracking experiment and priority of desk lamp design schemes. This study provides an objective and rational method to product form bionic design.

Keywords : Bionic design; Form; Eye tracking; FAHP; Desk lamp

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