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## **A Design of Light Source Module for High Efficiency LED Vehicle Headlamps**

高效率發光二極體汽車頭燈光源模組之設計

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### Abstract

This paper is aimed to improve the light source module of traditional projecting LED vehicle headlamps so that the overall light emitting efficiency of the headlamp can be increased and the required modules can be decreased. The light source module consists of a LED, a half-ellipsoid-reflector, an up-baffle, a base for sculpturing light pattern, and an aspherical lens. The feature of this module is the use of a sculpturing base in place of the mask to produce the light pattern that the light emitting efficiency can be increased without any light ray blocked. The simulated result shows the overall efficiency of the headlamp can be promoted up to two times and above. Thus only four modules are required to establish the light pattern and illumination distribution that fit the ECE regulation.

Key words : Light source module;Light emitting efficiency;

Half-ellipsoid-reflector;Base for sculpturing light pattern

關鍵字：光源模組；發光效率；半橢圓反射罩；光型雕塑底座