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Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

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United States Patent

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(12) **United States Patent**
Wu et al.

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(54) **LIGHT-MIXING TYPE LED PACKAGE STRUCTURE FOR INCREASING COLOR RENDER INDEX**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 196 days.

This patent is subject to a terminal disclaimer.

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(58) **Field of Classification Search** 257/21, 257/82, 84, 88, 99, 100, 431, 433, 788, E33.001, 257/E31.099, E31.105; 313/506, 509, 512
See application file for complete search history.

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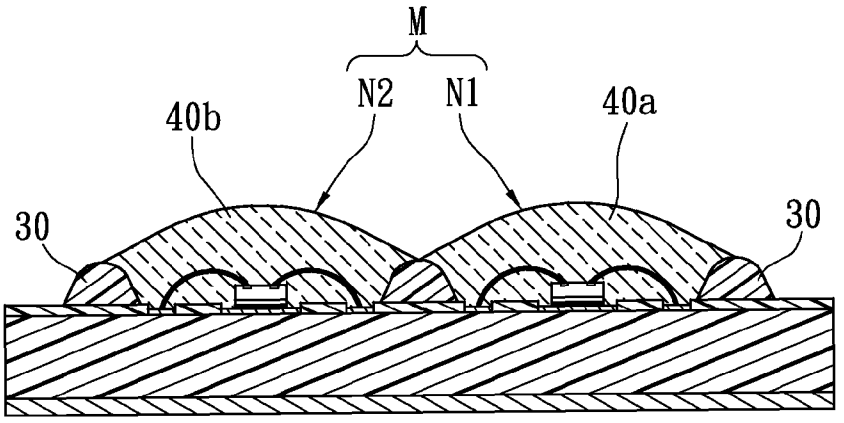
(57) **ABSTRACT**

A light-mixing type LED package structure for increasing color render index includes a substrate unit, a light-emitting unit, a frame unit and a package unit. The light-emitting unit has a first light-emitting module for generating a first color temperature and a second light-emitting module for generating a second color temperature. The frame unit has two annular resin frames surroundingly formed on the top surface of the substrate unit by coating. The two annular resin frames respectively surround the first light-emitting module and the second light-emitting module in order to form two resin position limiting spaces above the substrate unit. The package unit has a first translucent package resin body and a second translucent package resin body both disposed on the substrate unit and respective covering the first light-emitting module and the second light-emitting module.

10 Claims, 7 Drawing Sheets