OPTICAL DEVICE AUGMENTING THE EMISSION OF ELECTRO-LUMINESCENT LIGHT SOURCES WITH HELP OF A DICHROIC ZNO NANOROD COMPRISING FILTER

ABSTRACT

This Optical Device is conformed by an optical reflector and a filter, the reflector is a diffuse or specular metallic surface with a reflectance of not less than 98%, of shape and dimensions according to the lamp to be affected. The optical filter is a rigid structure and transparent to visible light, with geometric shape and dimensions also according to the lamp to be affected, it is made of organic or inorganic material, and serves as a substrate on which a layer of zinc oxide is applied, specifically a nano structure of zinc oxide nano wires, to form a partially reflective and anti-reflective layer simultaneously as a function of the wavelength of the light that passes through it. Properly placed on the luminescent layer of a fluorescent lamp or White Light LED, this Optical Device retro reflects to said luminescent layer, most of the light of short wavelength and high energy to be converted into longer wavelenght light and lower energy by the same source luminescent layer, which results in an increase of the total light emission of at least 20%, without modifying the Chromatic Reproduction Index (CRI) of the source.

[Figure 7]