Amorphous Silicon-Based PINIP Structure for Human-Like Photosensor

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Abstract : Because the existing structure of ambient light sensor is most silicon photodiode device, it is extremely sensitive in the red and infrared regions. Even though the IR-Cut filter had added, it still cannot completely eliminate the influence of infrared light, and the spectral response of infrared light was stronger than that of the human eyes. Therefore, it is not able to present the vision spectrum of the human eye reacts with the ambient light. Then it needs to consider that the human eye feels the spectra that show significant differences between light and dark place. Consequently, in practical applications, we must create and develop advanced device of human-like photosensor which can solve these problems of ambient light sensor and let cognitive lighting system to provide suitable light to achieve the goals of vision spectrum of human eye and save energy.

Keywords : ambient light sensor, vision spectrum, cognitive lighting system, human eye

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