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(72) **Inventors :**
ONG SIANG PHENG
HENG LEE SHYUAN
KO ZI YUAN

(73) **Patent Owner :**
Name: KROBOX SDN. BHD.
Address: BLOCK C, LEVEL 5, UNIT 13, SOUTHGATE BLOCK C, VERTEX JALAN DUA OFF, JALAN CHAN SOW LIN,
55200 WILAYAH PERSEKUTUAN KUALA LUMPUR
MALAYSIA

(74) **Agent :**
CHEE JENN YANG
C/O NBS INTELLECTUAL SDN. BHD., I-3-3, BLOCK I, SETIAWALK, PERSIARAN WAWASAN PUSAT BANDAR PUCHONG, 47160 Puchong Selangor, Malaysia

(54) **Title :** DYNAMIC MOTORLESS LIGHTING MODULE FOR EMULATING NATURAL LIGHT EFFECTS

(57) **Abstract :**

The present invention relates to a motorless lighting system (100) for replicating natural light effects, comprising a circuit board (200) with an embedded microcontroller programmed with a firmware algorithm for controlling light transition, brightness levels, and dimming effect for emulating natural lighting, one or more light-emitting diodes (LED) (400) is arranged in multiple channels and integrated with the circuit board (200) for emitting lights and one or more lenses (300) positioned for shaping, focusing, scattering the emitted lights, and controlling shadow formation and effects. Characterised in that, the firmware algorithm calculates the transition times and fade effects for the LED (400) for maintaining a gentle, organic flow, preventing abrupt changes and replicates natural phenomena, wherein the use of the firmware algorithm eliminates the need for a motor or mechanical components by digitally controlling the light path, focus, and scatter effects.