

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0244867 A1 CHOUNG et al.

(43) **Pub. Date:** Jul. 18, 2024

(54) ORGANOMETALLIC COMPOUND AND ORGANIC LIGHT EMITTING DIODE COMPRISING THE SAME

(71) Applicant: LG Display Co., Ltd., Seoul (KR)

(72) Inventors: **Kusun CHOUNG**, Seoul (KR);

Misang YOO, Seoul (KR); Hansol PARK, Goyang-si (KR); Yoojeong

JEONG, Seoul (KR)

(73) Assignee: LG Display Co., Ltd., Seoul (KR)

Appl. No.: 18/392,500

(22) Filed: Dec. 21, 2023

(30)Foreign Application Priority Data

(KR) 10-2022-0188049

Publication Classification

(51) **Int. Cl.**

H10K 50/12 (2006.01)H10K 50/15 (2006.01)

H10K 50/16 (2006.01) H10K 85/30 (2006.01)H10K 85/60 (2006.01)

(52) U.S. Cl.

CPC H10K 50/12 (2023.02); H10K 50/15 (2023.02); H10K 50/16 (2023.02); H10K 85/342 (2023.02); H10K 85/636 (2023.02); H10K 85/6572 (2023.02)

(57)ABSTRACT

Disclosed is an organic light-emitting diode including: a first electrode; a second electrode facing the first electrode; and an organic layer disposed between the first electrode and the second electrode, wherein the organic layer includes a light-emissive layer, a hole transport layer (HTL) and an electron transport layer (ETL), wherein the light-emissive layer includes a dopant material and a host material, wherein the dopant material includes an organometallic compound represented by a Chemical Formula 1, wherein the host material includes a mixture of a compound represented by a Chemical Formula 2 and a compound represented by a Chemical Formula 3, wherein the hole transport layer includes a compound represented by a Chemical Formula 4, wherein the electron transport layer includes a compound represented by a Chemical Formula 5. The organic lightemitting diode has excellent light-emitting efficiency and lifespan.

100

