

## (19) United States

### (12) Patent Application Publication (10) Pub. No.: US 2024/0215435 A1 PARK et al.

Jun. 27, 2024 (43) **Pub. Date:** 

### (54) ORGANIC LIGHT EMITTING DIODE COMPRISING ORGANOMETALLIC COMPOUND AND PLURALITY OF HOST **MATERIALS**

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

(72) Inventors: Sungjin PARK, Incheon (KR); Inbum SONG, Seoul (KR); Dohan KIM, Goyang-si (KR); Jaemin MOON, Seoul (KR); Seokwoo KANG, Hwaseong-si (KR); Soonjae HWANG,

Seoul (KR)

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

Appl. No.: 18/513,314 (21)

(22) Filed: Nov. 17, 2023

(30)Foreign Application Priority Data

Nov. 25, 2022 (KR) ...... 10-2022-0160634

#### **Publication Classification**

(51) Int. Cl. H10K 85/30 (2006.01)C09K 11/02 (2006.01)C09K 11/06 (2006.01)(2006.01) H10K 85/60

(52) U.S. Cl.

CPC ...... H10K 85/342 (2023.02); C09K 11/02 (2013.01); C09K 11/06 (2013.01); H10K 85/633 (2023.02); H10K 85/636 (2023.02); H10K 85/654 (2023.02); H10K 50/12 (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-emitting layer, wherein the light-emitting 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. The organic light-emitting diode has excellent light-emitting efficiency and lifespan.

# 100

