



US 20240244971A1

(19) **United States**

(12) **Patent Application Publication**  
**KIM et al.**

(10) **Pub. No.: US 2024/0244971 A1**

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

(54) **ORGANIC LIGHT EMITTING DIODE AND ORGANIC LIGHT EMITTING DEVICE INCLUDING THE SAME**

(71) Applicant: **LG DISPLAY CO., LTD.**, Seoul (KR)

(72) Inventors: **Sang-Beom KIM**, Paju-si (KR);  
**Young-Jun YU**, Paju-si (KR);  
**Seon-Keun YOO**, Paju-si (KR);  
**Dae-Wi YOON**, Paju-si (KR); **Su-Na CHOI**, Paju-si (KR); **Seong-Su JEON**, Paju-si (KR); **Ji-Yun KIM**, Paju-si (KR); **Yong-Hwan KIM**, Paju-si (KR); **Jin-Hwan PARK**, Paju-si (KR)

(73) Assignee: **LG DISPLAY CO., LTD.**, Seoul (KR)

(21) Appl. No.: **18/369,702**

(22) Filed: **Sep. 18, 2023**

(30) **Foreign Application Priority Data**

Dec. 26, 2022 (KR) ..... 10-2022-0184114

**Publication Classification**

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

(52) **U.S. Cl.**

CPC ..... **H10K 85/658** (2023.02); **C09K 11/02** (2013.01); **C09K 11/06** (2013.01); **H10K 85/626** (2023.02); **H10K 85/633** (2023.02); **H10K 85/636** (2023.02); **H10K 85/654** (2023.02); **H10K 85/6572** (2023.02); **H10K 50/12** (2023.02)

(57) **ABSTRACT**

The present disclosure relates to an organic light emitting diode including a first electrode; a second electrode facing the first electrode; and a first emitting part including a first blue emitting layer, a second blue emitting layer, an electron transporting layer and positioned between the first and second electrode, wherein the first blue emitting layer includes a first host and a first dopant, and the second blue emitting layer includes a second host and a second dopant, wherein the first host is an anthracene derivative having a first deuteration ratio, and the second host is an anthracene derivative having a second deuteration ratio smaller than the first deuteration ratio, wherein the first dopant is a first compound represented by Formula 3, and wherein the first electron transporting layer includes an electron transporting material represented by Formula 9.

D1

