

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0179955 A1

May 30, 2024 (43) **Pub. Date:**

(54) **DISPLAY DEVICE**

(71) Applicant: Samsung Display Co., Ltd.,

Gyeonggi-do (KR)

(72) Inventors: Jae Ik KIM, Yongin-si (KR); Hye Jin

GWARK, Yongin-si (KR); Hwi KIM, Yongin-si (KR); Jung Sun PARK, Yongin-si, Gyeonggi-do (KR); Yeon Hwa LEE, Yongin-si (KR); Joon Gu

LEE, Yongin-si (KR)

(21) Appl. No.: 18/244,535

Filed: Sep. 11, 2023 (22)

(30)Foreign Application Priority Data

Nov. 25, 2022 (KR) 10-2022-0160646

Publication Classification

(51) Int. Cl.

H10K 59/122 (2006.01)H10K 50/15 (2006.01)

H10K 50/16 (2006.01)H10K 50/17 (2006.01)

U.S. Cl.

CPC H10K 59/122 (2023.02); H10K 50/15 (2023.02); H10K 50/16 (2023.02); H10K

50/171 (2023.02)

ABSTRACT

A display device includes a pixel electrode, a pixel defining layer disposed on the pixel electrode and forming an opening which exposes a portion of the pixel electrode, an auxiliary electrode disposed on the pixel defining layer and the pixel electrode, an intermediate layer disposed on the pixel defining layer and the auxiliary electrode and a common electrode disposed on the intermediate layer. The pixel defining layer includes a recessed portion recessed into the pixel defining layer, the auxiliary electrode includes a first undercut forming portion disposed on the recessed portion and contacting the portion of the pixel electrode, and the intermediate layer includes a hole injection layer, a lightemitting layer and an electron injection layer stacked sequentially. The hole injection layer includes a first portion disposed on the first undercut forming portion and a second portion separated from the first portion and disposed on the recessed portion.

