



US 20240237429A1

(19) **United States**

(12) **Patent Application Publication**

SEON et al.

(10) **Pub. No.: US 2024/0237429 A1**

(43) **Pub. Date:**

**Jul. 11, 2024**

(54) **DISPLAY PANEL**

(71) Applicant: **SAMSUNG DISPLAY CO., LTD.**,  
Yongin-si (KR)

(72) Inventors: **Jongbaek SEON**, Yongin-si (KR);  
**Jaehak LEE**, Yongin-si (KR); **Juncheol SHIN**, Yongin-si (KR); **Kyungchan CHAE**, Yongin-si (KR); **Jieun CHOI**, Yongin-si (KR)

(21) Appl. No.: **18/613,089**

(22) Filed: **Mar. 21, 2024**

*H10K 59/122* (2006.01)  
*H10K 59/123* (2006.01)  
*H10K 59/131* (2006.01)  
*H10K 71/00* (2006.01)  
*H10K 102/00* (2006.01)

(52) **U.S. Cl.**  
CPC ..... *H10K 59/124* (2023.02); *H10K 50/84* (2023.02); *H10K 59/122* (2023.02); *H10K 59/123* (2023.02); *H10K 59/131* (2023.02); *H10K 71/00* (2023.02); *H10K 2102/00* (2023.02)

(25) **Related U.S. Application Data**

(63) Continuation of application No. 17/674,602, filed on Feb. 17, 2022, now Pat. No. 11,943,974, which is a continuation of application No. 16/823,224, filed on Mar. 18, 2020, now Pat. No. 11,348,985.

(30) **Foreign Application Priority Data**  
Jun. 19, 2019 (KR) ..... 10-2019-0073101

**Publication Classification**

(51) **Int. Cl.**  
*H10K 59/124* (2006.01)  
*H10K 50/84* (2006.01)

(57) **ABSTRACT**

A display panel includes: a substrate including a first area, a second area, and a third area; a stacked structure corresponding to a plurality of display elements in the second area, the stacked structure including a pixel electrode, an opposite electrode, and an intermediate layer between the pixel electrode and the opposite electrode; and a plurality of grooves in the third area, wherein the stacked structure includes at least one organic material layer that is disconnected by the plurality of grooves, at least one groove of the plurality of grooves is defined in a first multi-layer including a first lower layer and a first upper layer, and at least one of the first lower layer and the first upper layer includes a plurality of sub-layers.

