



US 20240179945A1

(19) **United States**(12) **Patent Application Publication**
MOU et al.(10) **Pub. No.: US 2024/0179945 A1**(43) **Pub. Date: May 30, 2024**(54) **DISPLAY SUBSTRATE, DISPLAY PANEL
AND DISPLAY DEVICE**(57) **ABSTRACT**(71) Applicants: **Chengdu BOE Optoelectronics
Technology Co., Ltd.**, Chengdu,
Sichuan (CN); **BOE Technology Group
Co., Ltd.**, Beijing (CN)(72) Inventors: **Xin MOU**, Beijing (CN); **Yuhsiong
FENG**, Beijing (CN); **Hongting LU**,
Beijing (CN)(21) Appl. No.: **17/790,349**(22) PCT Filed: **Jul. 20, 2021**(86) PCT No.: **PCT/CN2021/107421**

§ 371 (c)(1),

(2) Date: **Jun. 30, 2022****Publication Classification**(51) **Int. Cl.****H10K 59/121** (2006.01)**H10K 59/122** (2006.01)**H10K 59/131** (2006.01)**H10K 59/35** (2006.01)(52) **U.S. Cl.**CPC **H10K 59/1213** (2023.02); **H10K 59/1216**
(2023.02); **H10K 59/122** (2023.02); **H10K**
59/131 (2023.02); **H10K 59/35** (2023.02)

The present application provides a display substrate, a display panel and a display device. An orthographic projection of the pixel opening of the first color sub-pixel of the display substrate on the base substrate, an orthographic projection of the pixel opening of the second color sub-pixel on the base substrate, and an orthographic projection of the pixel opening of the third color sub-pixel on the base substrate all have no overlap with the orthographic projections of the channel of the driving transistors thereof on the base substrate respectively. Alternatively, an orthographic projection of the pixel opening of at least one sub-pixel on the base substrate has overlap with an orthographic projection of the channel of the driving transistor thereof on the base substrate, an orthographic projection of the pixel opening of at least one of the second color sub-pixels in a first direction has overlap with an orthographic projection of the pixel opening of the first color sub-pixel in the first direction and an orthographic projection of the pixel opening of the third color sub-pixel in the first direction, and the orthographic projection of the pixel opening of the second color sub-pixel in a second direction has no overlap with either an orthographic projection of the pixel opening of the first color sub-pixel in the second direction or an orthographic projection of the pixel opening of the third color sub-pixel in the second direction, where the first direction intersects with the second direction.

