

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0215430 A1 LIU et al.

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

(54) STRETCHABLE DISPLAY SUBSTRATE AND MANUFACTURING METHOD THEREOF

(71) Applicant: BOE Technology Group Co., Ltd.,

Beijing (CN)

Inventors: Wenqi LIU, Beijing (CN); Jinxiang

XUE, Beijing (CN); Wei QUAN, Beijing (CN); Qingyu HUANG, Beijing (CN); Jingkai NI, Beijing (CN)

17/799,807 (21) Appl. No.:

PCT Filed: (22)Nov. 10, 2021

(86) PCT No.: PCT/CN2021/129771

§ 371 (c)(1),

Aug. 15, 2022 (2) Date:

(30)Foreign Application Priority Data

Feb. 26, 2021 (CN) 202110219236.4

Publication Classification

(51)	Int. Cl.	
	H10K 77/10	(2006.01)
	H10K 59/12	(2006.01)
	H10K 59/127	(2006.01)
	H10K 59/131	(2006.01)
	H10K 59/80	(2006-01)

H10K 71/80 (2006.01)H10K 102/00 (2006.01)

(52) U.S. Cl.

CPC H10K 77/111 (2023.02); H10K 59/1201 (2023.02); H10K 59/127 (2023.02); H10K 59/131 (2023.02); H10K 59/873 (2023.02); H10K 71/80 (2023.02); H10K 2102/311 (2023.02)

(57)ABSTRACT

The present disclosure provides a stretchable display substrate and a manufacturing method. The stretchable display substrate includes: a base substrate, a plurality of opening patterns being distributed on the base substrate, a plurality of bridges being formed between adjacent ones of at least a part of opening patterns in the plurality of opening patterns to define islands; a plurality of display units, at least one display unit being arranged on each island; a plurality of wiring units each coupled between the display units on the islands and arranged on the bridge; and a thin film encapsulation layer including a first encapsulation portion covering a side of each display unit away from the base substrate and a second encapsulation portion at least covering a side of each display unit adjacent to the opening pattern. Each of at least a part of opening patterns has different opening sizes at a side of the base substrate adjacent to the display unit and a side of the base substrate away from the display unit, and the opening pattern has at least one step-like structure at a side adjacent to the island. According to the present disclosure, it is able to improve the reliability of a display element.

