

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0237341 A1

Jul. 11, 2024 (43) **Pub. Date:**

(54) NON-VOLATILE MEMORY DEVICE, METHOD FOR FABRICATING THE SAME AND ELECTRONIC SYSTEM INCLUDING THE SAME

- (71) Applicant: Samsung Electronics Co., Ltd., Suwon-si (KR)
- (72) Inventors: Jung-Hwan Lee, Suwon-si (KR); Hyunmin Cho, Suwon-si (KR)
- (21) Appl. No.: 18/335,358
- (22) Filed: Jun. 15, 2023
- Foreign Application Priority Data (30)

Jan. 10, 2023 (KR) 10-2023-0003617

Publication Classification

(51) Int. Cl. H10B 43/27 (2006.01)H10B 41/27 (2006.01)H10B 41/41 (2006.01)(2006.01) H10B 43/40

(52) U.S. Cl.

CPC H10B 43/27 (2023.02); H10B 41/27 (2023.02); H10B 41/41 (2023.02); H10B 43/40 (2023.02)

(57)ABSTRACT

A non-volatile memory device may include a channel structure including a first stacking structure, a second stacking structure, a first channel structure penetrating the first stacking structure, and a second channel structure penetrating the second stacking structure. The second channel structure includes a first portion having a width that decreases or is maintained as the first portion extends toward the substrate, and a second portion having a width that increases as the second portion extends toward the substrate.

