



US 20240215273A1

(19) **United States**

(12) **Patent Application Publication**

Yang et al.

(10) **Pub. No.: US 2024/0215273 A1**

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

(54) **THREE-DIMENSIONAL MEMORY DEVICES
AND FABRICATING METHODS THEREOF**

Publication Classification

(51) **Int. Cl.**
H10B 80/00 (2006.01)
(52) **U.S. Cl.**
CPC H10B 80/00 (2023.02)

(71) Applicant: **YANGTZE MEMORY
TECHNOLOGIES CO., LTD.**, Wuhan
(CN)

(72) Inventors: **Yuancheng Yang**, Wuhan (CN);
Dongxue Zhao, Wuhan (CN); **Tao
Yang**, Wuhan (CN); **Lei Liu**, Wuhan
(CN); **Di Wang**, Wuhan (CN); **Kun
Zhang**, Wuhan (CN); **Wenxi Zhou**,
Wuhan (CN); **Zhiliang Xia**, Wuhan
(CN); **Zongliang Huo**, Wuhan (CN)

(57) **ABSTRACT**

Three-dimensional (3D) memory devices and fabricating methods are disclose. A disclosed 3D memory device can comprises, a first semiconductor structure comprising an array of first type memory cells, a second semiconductor structure comprising an array of second type memory cells different from the first type memory cells, a third semiconductor structure comprising a first peripheral circuit, and a fourth semiconductor structure comprising a second peripheral circuit. The first semiconductor structure, the second semiconductor structure, the third semiconductor structure, and the fourth semiconductor structure are stacked over one another.

(21) Appl. No.: **18/089,506**

(22) Filed: **Dec. 27, 2022**

(30) **Foreign Application Priority Data**

Dec. 22, 2022 (CN) 202211667114.2

