

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2023/0403849 A1 Chandolu et al.

Dec. 14, 2023 (43) **Pub. Date:**

(54) MICROELECTRONIC DEVICES WITH SUPPORT PILLARS SPACED ALONG A SLIT REGION BETWEEN PILLAR ARRAY BLOCKS, AND RELATED METHODS AND **SYSTEMS**

(71) Applicant: Micron Technology, Inc., Boise, ID

Inventors: Anilkumar Chandolu, Boise, ID (US): Indra V. Charv, Boise, ID (US)

(21) Appl. No.: 18/366,748

(22) Filed: Aug. 8, 2023

Related U.S. Application Data

(63) Continuation of application No. 17/063,101, filed on Oct. 5, 2020, now Pat. No. 11,723,196.

Publication Classification

(51) Int. Cl. H10B 41/27 (2006.01)H10B 41/10 (2006.01)

H10B 41/35	(2006.01)
H10B 43/10	(2006.01)
H10B 43/27	(2006.01)
H10B 43/35	(2006.01)

(52) U.S. Cl.

CPC H10B 41/27 (2023.02); H10B 41/10 (2023.02); H10B 41/35 (2023.02); H10B 43/10 (2023.02); H10B 43/27 (2023.02); H10B 43/35 (2023.02)

(57)**ABSTRACT**

A microelectronic device includes a stack structure comprising a vertically alternating sequence of insulative structures and conductive structures arranged in tiers. At least one slit region divides the stack structure into blocks. Each block comprises an array of active pillars. Along the at least one slit region is a horizontally alternating sequence of slit structure segments and support pillar structures. The slit structure segments and the support pillar structures each extend vertically through the stack structure. Additional microelectronic devices are also disclosed as are related methods and electronic systems.

