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(19) **United States**(12) **Patent Application Publication****Yeh et al.**(10) **Pub. No.: US 2023/0231003 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **MANUFACTURING METHOD OF CAPACITOR STRUCTURE****Publication Classification**(51) **Int. Cl.**
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CPC **H01L 28/60** (2013.01); **H01L 27/0629** (2013.01); **H01L 27/0605** (2013.01)(71) Applicant: **UNITED MICROELECTRONICS CORP.**, Hsin-Chu City (TW)(72) Inventors: **Chih-Tung Yeh**, Taoyuan City (TW);
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(57) **ABSTRACT**

A capacitor structure includes an insulation layer and a capacitor unit disposed on the insulation layer. The capacitor unit includes a first electrode, a second electrode, a first dielectric layer, and a patterned conductive layer. The second electrode is disposed above the first electrode in a vertical direction. The first dielectric layer is disposed between the first electrode and the second electrode in the vertical direction. The patterned conductive layer is disposed between first electrode and the second electrode, the patterned conductive layer is electrically connected with the first electrode, and the first dielectric layer surrounds the patterned conductive layer in a horizontal direction.

