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(54) **THREE-DIMENSIONAL MEMORY DEVICE AND METHOD OF MAKING THEREOF INCLUDING NON-CONFORMAL SELECTIVE DEPOSITION OF SPACERS IN MEMORY OPENINGS**

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(57) **ABSTRACT**

A memory device includes an alternating stack of insulating layers and electrically conductive layers located over a substrate, a memory opening vertically extending through the alternating stack, a memory opening fill structure located in the memory opening and including a vertical stack of memory elements and a vertical semiconductor channel, and a vertical stack of insulating spacers located at levels of the insulating layers between the memory opening fill structure and the insulating layers. The insulating spacers have different thicknesses such that the thicknesses of the insulating spacers increase with an upward vertical distance from a horizontal plane including a top surface of the substrate.