

ABSTRACT

Methods of manufacturing memory devices are provided. The method comprises pre-cleaning a top surface of a film stack, the film stack comprising alternating layers of a first material layer and a second material layer and having one or more of a memory hole and a slit pattern opening extending through the film stack; 5 exposing the top surface of the film stack to a growth inhibitor; selectively depositing a silicon-containing dielectric layer in a region of the film stack; and densifying the silicon-containing dielectric layer. The processing method is performed in a processing tool without breaking vacuum.