[ABSTRACT]

Described herein is a technique capable of selectively forming a thin film on a substrate while suppressing damage to other films of the substrate. According to the technique, there is provided a method of manufacturing a semiconductor device, including: (a) removing a natural oxide film from a surface of a substrate by supplying a first inorganic material to the substrate wherein a first film and a second film different from the first film are exposed on the surface of the substrate; (b) forming an oxide film by oxidizing a surface of the first film by supplying an oxidizing agent to the substrate; (c) modifying the surface of the first film by supplying a second inorganic material to the substrate; and (d) selectively growing a thin film on a surface of the second film by supplying a deposition gas to the substrate, wherein (a) through (d) are sequentially performed.