

ABSTRACT

METHOD OF MANUFACTURING SEMICONDUCTOR DEVICE, SUBSTRATE PROCESSING APPARATUS AND PROGRAM

According to one aspect of the technique, there is provided a method of manufacturing a semiconductor device, including: modifying a surface of a substrate into an impurity-containing layer by performing: (a) supplying an impurity-containing gas containing an impurity and a dilution gas into a process chamber in which the substrate is accommodated; (b) plasma-exciting the impurity-containing gas and the dilution gas; and (c) supplying an active species containing the impurity generated by plasma-exciting the impurity-containing gas and the dilution gas to the substrate, wherein a flow rate ratio of the impurity-containing gas to the dilution gas is controlled in (a) such that a partial pressure of the impurity-containing gas in the process chamber is set to a predetermined partial pressure less than a partial pressure at which the impurity-containing gas forms deposits containing a polymer in the process chamber.

Figure 1