

ABSTRACT

DEPOSITION METHOD OF METAL OXIDE AND MANUFACTURING METHOD OF
MEMORY DEVICE

5 A method for depositing a metal oxide is provided. The deposition method of a metal oxide includes a first step of introducing a first precursor into a first chamber, a second step of introducing a second precursor into the first chamber, a third step of introducing a third precursor into the first chamber, a fourth step of introducing an oxidizer in a plasma state into the first chamber after each of the first step, the second step, and the third step, and a fifth step of
10 performing microwave treatment. Performing each of the first to fourth steps one or more times is regarded as one cycle, and the fifth step is performed in a second chamber after the one cycle is repeated a plurality of times. The first to third precursors are different kinds of precursors, the microwave treatment is performed using an oxygen gas and an argon gas, the metal oxide includes a crystal region, and a c-axis of the crystal region is substantially parallel to a normal vector of a
15 surface where the metal oxide is formed or a normal vector of a surface of the metal oxide.

Figure 1