Abstract

Because the boron-doped zinc oxide（BZO）thin films was used for the applications of non-volatile memory（NVM）. In this work，aimed at the study of zinc oxide thin films for dielectric layer of the influence of different low temperature annealing on the devices resistance switching characteristics .We used boron-doped zinc oxide for MIM (Metal-Insulator-Metal)capacitor and the structure is Ni / BZO / Ni, which annealing temperature are 300 ^{o}C, 400 ^{o}C and 500^{o}C.

According to using the DC voltage sweeping, we observe that this memory devices are unipolar resistive switching behavior. The temperature-dependent I-V characteristics, charge to switch were measured and analyzed.

Keywords: low temperature annealing, boron-doped ZnO（BZO）, resistance switching, conduction mechanism, cycling endurance, data retention and reading durability.