

## Abstract

In this study, we investigated the resistive memory (RRAM), top and bottom electrodes are of nickel (Ni), zinc oxide doped with phosphorus (PZO) as MOM (metal-oxide-metal) dielectric layer capacitors, we sweep DC voltage mode to know the studied of resistance switching characteristics and physical analysis (penetration, XPS, XRD), and observe resistance switching value, reliability under different temperature. We analysis oxygen layer inside oxygen vacancy migration by source of the microscopic the oxide migration, such as Fick force, Soret force and electric force. However, form filament or filament breaks decided to the high and low resistance states, so we analyze current conduction mechanism (Hopping Conduction、Ohmic Conduction、Schottky Emission) of RRAM, however, There is a situation of higher electric field and higher resistance under ohmic conduction of low resistance state.