

C-V CHARACTERIZATION AND ELECTRIC PARAMETERS OF ZrO₂ RECEIVED BY UV STIMULATED PLASMA ANODIZING

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Abstract

Low temperature technologies creating metals oxides are promising solution for formation integral circuit elements. In this report have been investigated the electric properties of zirconia (ZrO₂) received by low temperature (~ 400⁰ C) UV stimulated plasma anodizing. Zirconia is a potential high-k dielectric material with potential applications as agate insulator in transistors. This dielectric is distinguished by good electric parameters. For this purpose we used C-V characterization technic and calculate dielectric constant, flatband voltage, threshold voltage, bulk potential, work function, oxide effective charge, charge concentration. The C-V measurement was carried out on Keithley Instrument Semiconductor Parameter Analyzer 4200, oxide thickness was measured by reflectometer – MprobeVis System

Keywords: dielectric, anodizing, charge, capacitance.