

## Electrical performance of Metal/Silicon Polymer/Silicon capacitor device

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MIS(Metal-Insulator-Semiconductor) structured capacitor using Si has been developed until now as an important electronic device. Its structure is designed to use the electronic phenomenon on the surface of Si and insulator. In this study, an organic-inorganic compound substance is adopted as a gate insulator in MIS structure. The gate insulator consists of TEOS (Tetraethoxysilane) and MPTMS (Methacryloyloxypropyltrimethoxysilane) compound substance or its mixture with carbon-based polymer and their capacitance-voltage behaviors are studied. TEOS and MPTMS are crosslinked with UV radiation to improve the electronic performance. First, TEOS and MPTMS is mixed in several weight ratio and add PVA (PolyVinyl Alcohol) as a organic material. Then, the mixed precursor is spin coated on a heavily Boron doped Si wafer and next treated UV, heated. Finally, Al was evaporated through a shadow mask on the device as a gate of MIS structure after treating and heating. We analyzed electric properties and structural properties of the device by using C-V plotter, FT-IR and FE-SEM.