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Electrical Properties of Pt/Polyvinylidenefluoride/Pt modified by keV irradiation

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Polyvinylidenefluoride (PVDF) is one of ferroelectric polymers and many researchers has concentrated on the electrical properties of PVDF. Al has been used due to fair adhesion for PVDF. Work function of metal plays an important role on the electrical properties of ferroelectrics for top and/or bottom electrode. However, Al has lower work function than Pt or Au and so leakage current of Al/PVDF/Al may be large. Pt or Au has not been used for electrode of PVDF system due to poor adhesion. PVDF was irradiated by 1.2 keV Ar+ with 02 flow rate of 8 sccm. Contact angle of PVDF to triple distilled water was reduced from 75o to 31o at 11015 Ar+/cm2. Working pressure was 2.310-4 Torr and base pressure was 110-5 Torr. Pt was deposited by ion beam sputtering and thickness of Pt film was 1000Å. In previous study, enhancing adhesion of Pt on PVDF was shown. In this study, effect of electrode on PVDF will be represented.

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