

[M-04]

Relationship between SPL and different electrodes of PVDF film speaker

C. S. Lee**, J. Joo, S. Han**, J. W. Seok**, W. J. Lee**, and Y. W. Beag**

Department of Physics, Korea University, *Thin Film Technology Research Center, KIST, **P&I Corporation

Piezoelectric poly (vinylidene fluoride) (PVDF) surface which possesses low surface energy is modified by ion-assisted-reaction (IAR) method for making high durable loud film speaker. The surface energy of treated PVDF was estimated from the wetting angles. The IAR treated hydrophilic PVDF surface was investigated by atomic force microscopy (AFM) and X-ray photoelectron spectroscopy (XPS). The film speakers were fabricated with electrically enhanced conducting polymers, metals, ceramic electrodes and IAR treated PVDF. The PVDF film speaker with the PEDOT/PSS electrode showed high durability compared to the metals or indium tin oxide (ITO) electrodes at high voltage. PVDF film speakers with various electrodes were studied in terms of mechanical and electrical property to understand relationship with acoustic property. The highly conducting polymer as electrode is more suitable to PVDF-based film speaker compared to metal or ITO because of electrically stable at a high voltage and mechanically ductile.