Changes in Piezoelectric Characteristics of PVDF Film with Manufacturing Process

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The changes in the piezoelectric characteristics of poly vinylidene fluoride which is a piezoelectric substance caused by the changes in its raw materials and process were investigated. The specimens of the spherical PVDF whose molecular weights were 18,000, 27,000 and 45,000 were processed into film at high pressure and temperature condition in a hot press. Films of different characteristics were obtained from the raw PVDF material of the same molecular weight by applying different temperature and pressure conditions. Silver paste was coated with silk screen method to form electrodes on both sides of the PVDF films to measure the piezoelectric characteristics and for poling. For the poling of the processed films, temperature and time were controlled with a poling machine and electric field was applied with a high voltage generator. The piezoelectric constant of the PVDF films were measured with a piezoelectric charge tester, by measuring the output voltage values by applying impact on their surface.