

Abstract: The outstanding features and the charge stability achieved by negative and positive charging tetrafluoroethylene-perfluoromethoxyethylene copolymer (PFA) at elevated temperature have been investigated by means of corona charging and thermally stimulated current (TSC) experiments. Optimal charging temperatures for negative and positive charging have been determined. Activation energies, which are obtained from the initial rise of the TSC peaks, and by the peak cleaning technique, are 0.7, 1.0, 1.3, and 1.1 eV at room temperature (R_T), 1.4 eV at 200°C for negative charging. Mean charge depths and charge distributions were measured at various stages of open-circuit TSC measurements on corona charged PFA by means of the laser-induced pressure pulse (LIPP) method. The spatial charge distribution of the different energy levels along the thickness direction of the sample has been determined by means of electron beam charging in combination with TSC measurements. The charged state of some virgin PFA films is discussed. Some electrical and mechanical properties of PFA are compared with those of fluorinated ethylene propylene (FEP)