

Abstract: Taking the corona-charging of Teflon-FEP foil with or without control grid inserted between a discharge needle and the foil at RT in air for example, we investigate the charging effects of this foil. The grid makes the charge distribution on the sample more uniform and controls the magnitude of its surface potential. The variation of charging parameters affects the charging results. The experiments show that the parameters, such as the needle voltage, the charging time, the grid voltage, the aperture of the grid mesh, the needle-to-grid spacing and the grid-to-foil spacing, affect the charging surface potential value and the charge distribution on the surface of the foil. In this paper, the optimum charging parameters of Teflon-FEP foil are obtained. These parameters are suitable for other polymers in the same conditions.