Abstract: In the study of electro-optic polymers with nonlinear optical activity, the phenomena of electrochromic shifts and intensity decreases of charge-transfer absorption bands in the polymer film after corona poling have been used for real-time monitoring of the corona-poling process and poling stability. In this paper, the structure changes of the chromophore dipoles doped or chemically attached to polymer macromolecules before and after poling were investigated by measuring UV-VIS and IR spectra. The electrochromic mechanism was discussed. The results indicated that the main reason for the electrochromic shifts was the deformation of the conjugate system in the chromophore dipole. The solvent used during specimen preparation affects the material structure.