Supporting Information

1. FT-IR measurement of PSBS

The FT-IR spectrum of PSBS was shown in Figure S1. The bands at 1253 cm^{-1}, 1160 cm^{-1} and 1068 cm^{-1} belongs to the wagging vibrations of S=O, which confirm the existence of sulfonate monomers. The bands at 2960, 2873, 1731 and 1452 cm^{-1} belong to vibration absorbance of $-CH_3$, $-CH_2$, C=O and $-CH_3$ respectivel, which confirm the existences of butyl acrylate monomer unit. The bands at 761 and 701 cm^{-1} indicate the existence of styrene monomer. Thus, this spectrum confirm the terpolymer components qualitatively.

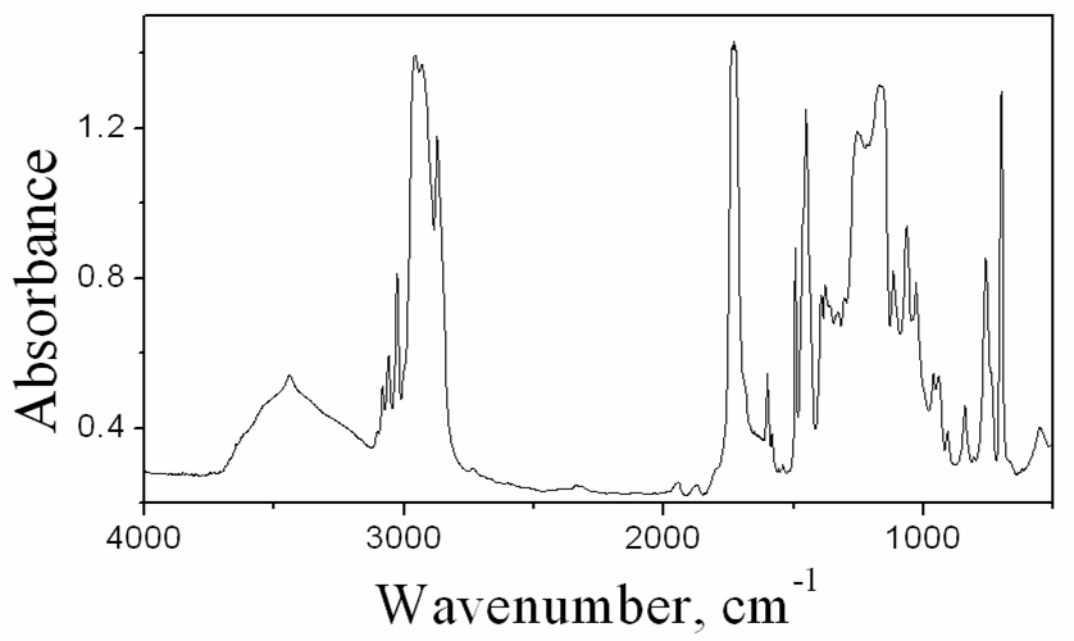

Figure3.4 FTIR spectrum of poly (St-co-BA-co-SAS) film

2. X-ray diffraction (XRD) pattern of poly (St-co-BA-co-SAS) film

Figure SI2 shows the X-ray diffraction (XRD) pattern of PSBS. The typical broad band is clearly shown around 2θ=20° which indicates that PSBS is noncrystalline structure in solid state.

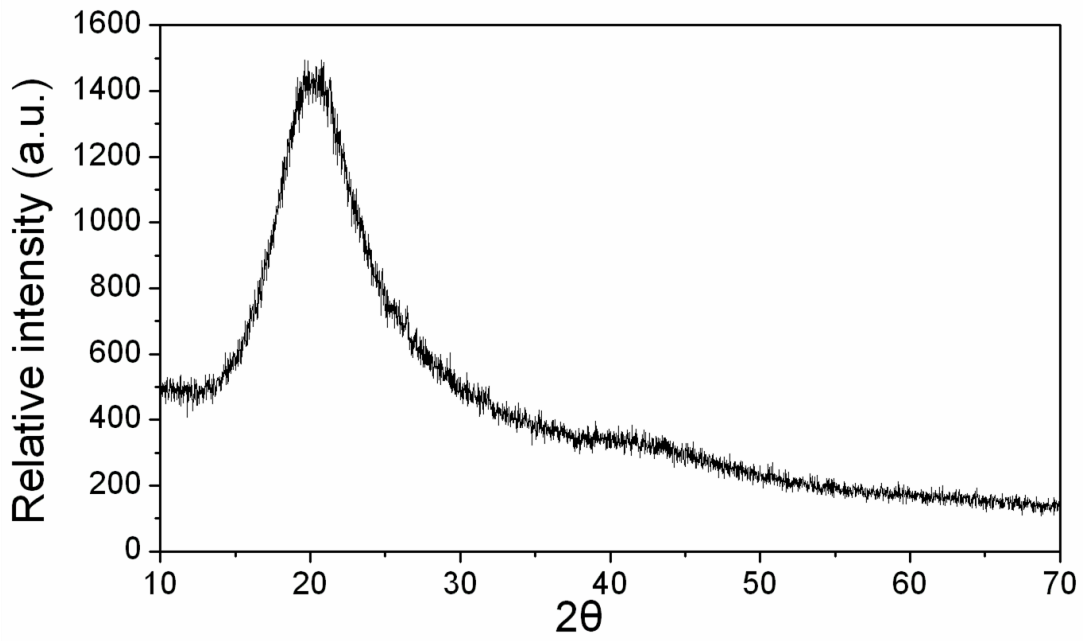

Figure3.5 X-ray diffraction (XRD) result of poly (St-co-BA-co-SAS) film