Supporting Information

Contents
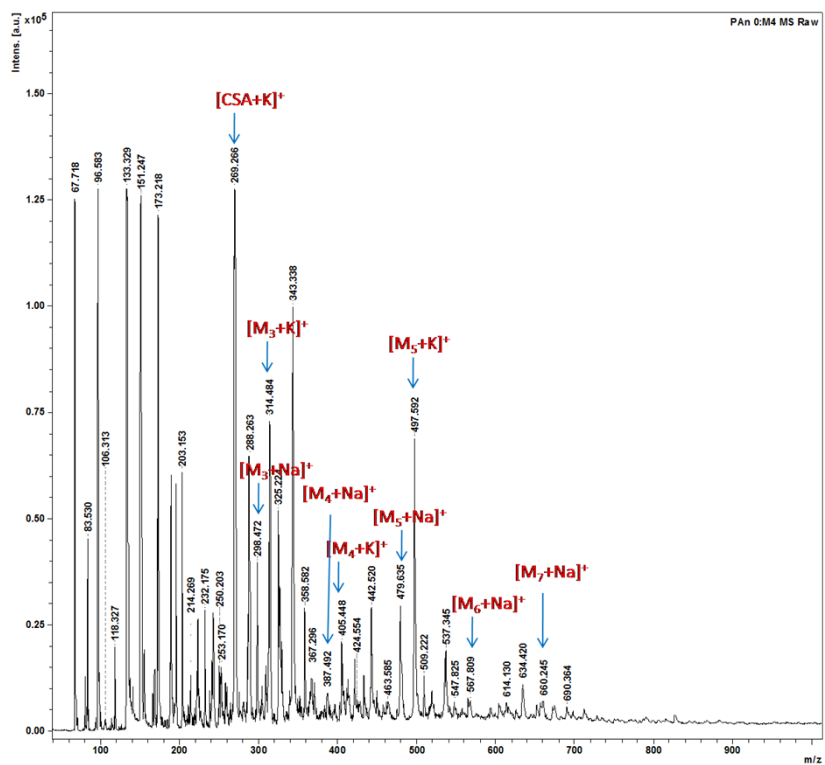
Supplementary discussion

Fig. S1. MALDI-TOF MS spectrum of PAn.
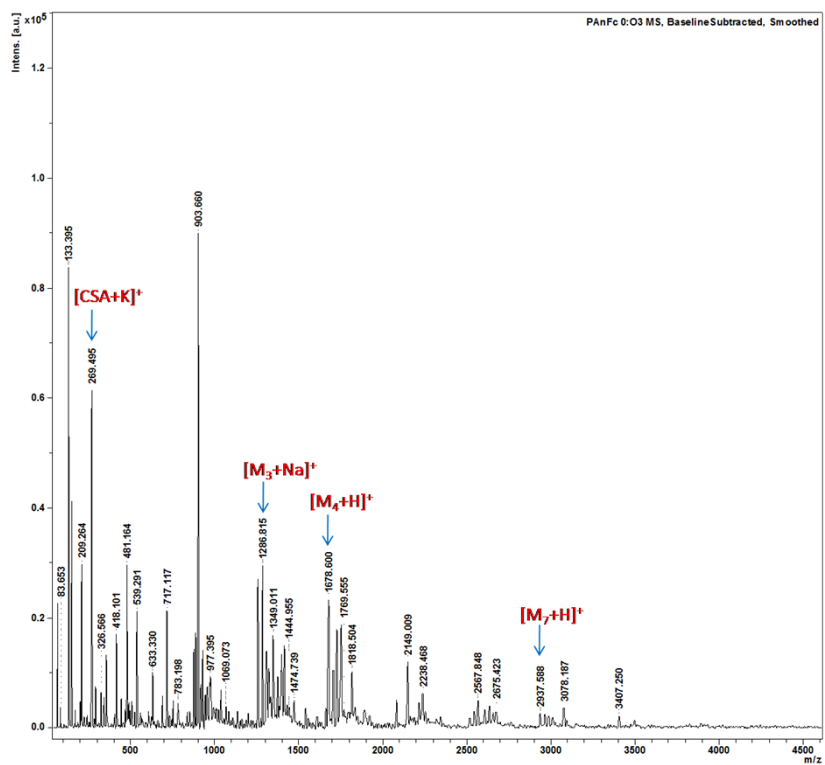
Fig. S2.

Fig. S2. MALDI-TOF MS spectrum of PAnFc.
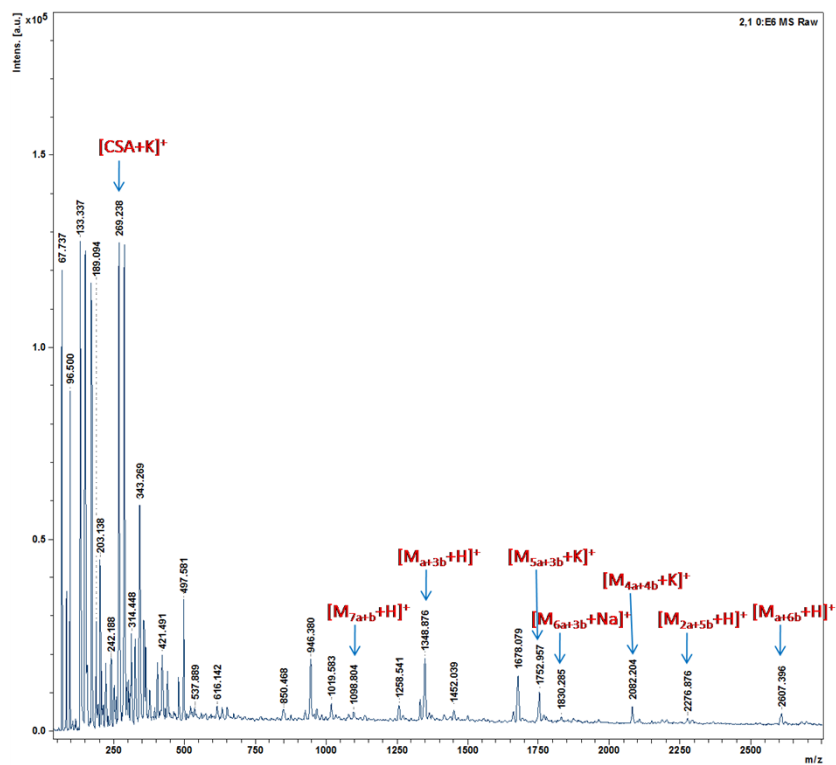
Fig. S3.

Fig. S3. MALDI-TOF MS spectrum of P (An-co-AnFc) (2:1).

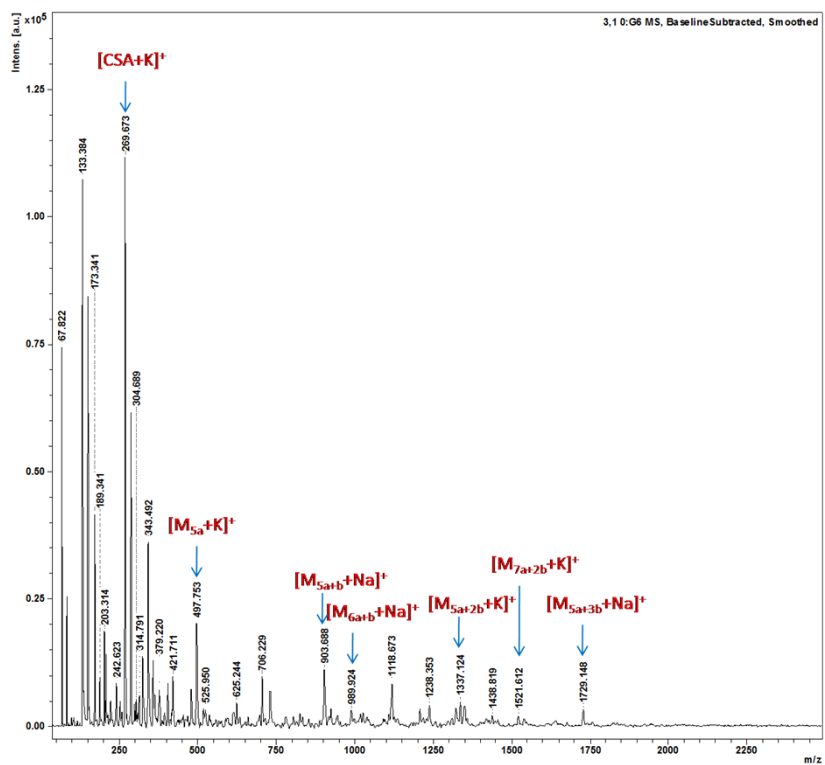a: An; b: AnFc

Fig. S4.

Fig. S4. MALDI-TOF MS spectrum of P (An-co-AnFc) (3:1).
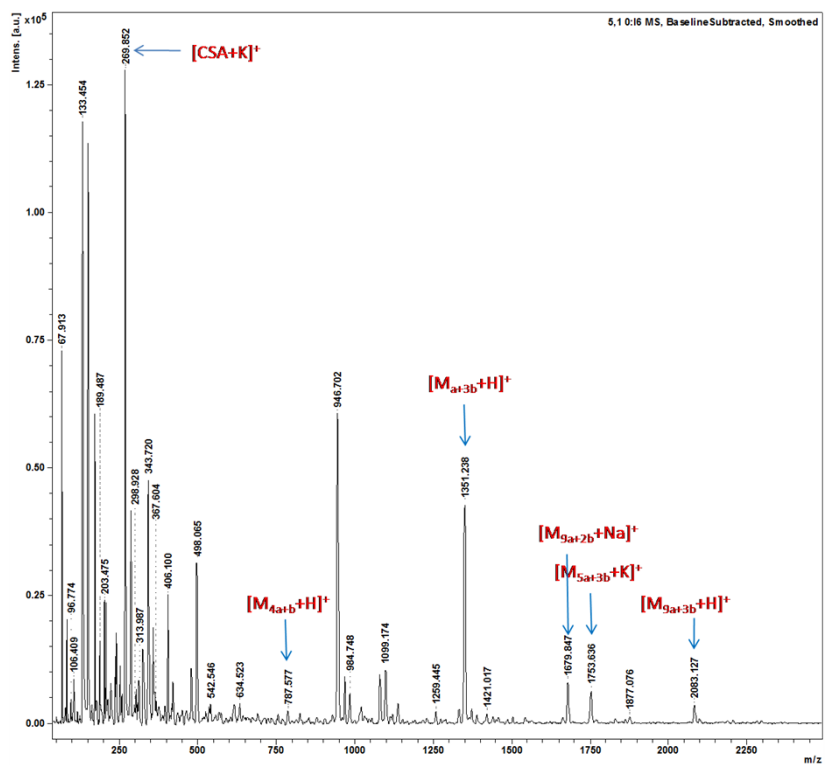a: An; b: AnFc

Fig. S5.

Fig. S5. MALDI-TOF MS spectrum of P (An-co-AnFc) (5:1).

a: An; b: AnFc

Supplementary discussion

The MALDI-TOF analysis for the PAn, PAnFc, P (An-co-AnFc) (2:1), P (An-co-AnFc) (3:1) and P (An-co-AnFc) (5:1) have been made, and the corresponding description has been written as following: The MALDI-TOF MS spectra (UltrafleXtreme, Bruker Daltonics)were further attempted to investigate the molecular weight and assess somewhat the degree of polymerization. From MALDI-TOF MS spectra of the polymers above, we can aquire some information marked in the figure which can speculate the degree of polymerization and the composition of copolymers. For example, the MALDI-TOF MS spectrum of PAnFc exhibits a peak at 2937.588 Da attributed to $[M_7+H]^+$ which means PAnFc sample contain a polymer which polymerization degree is equal to 7. In the spectra of the copolymers, "a" and "b" represent "An" and "AnFc", respectively. For instance, "6a+3b" means copolymer sample containing a structure of six An monomer and three AnFc monomer.

For PAn, the biggest and the smallest molecular weight of the polymers combined with ion are 660.245 Da and 298.472 Da, while the polymerization degree distribution is from three to seven. For PAnFc, the biggest and the smallest molecular weight of the polymer containing metallic ion are 2937.588 and 1286.815 Da, from which the polymerization degree distribution can be calculated among three to seven. In terms of P (An-co-AnFc) (2:1), the biggest and the smallest molecular weight of the polymers combined with metallic ion are 2607.396 and 1098.804 Da, and the polymerization degree is changed from four to nine. For P (An-co-AnFc) (3:1), the biggest and the smallest molecular weight of the polymer containing metallic ion are 1729.148 and 497.753 Da, with the polymerization degree distribution changing five to nine. For P (An-co-AnFc) (5:1), the biggest and the smallest molecular weight of the polymers are 787.577 and 2083.127 Da, with the polymerization degree distribution among four to twelve. What's more, it can also be observed in the above spectra of the copolymers, that the ratio of "b" content increase with the changing feeding ratio of An/AnFc from 5/1 to 2/1, indicating the increasing content of AnFc moieties in copolymer with the increasing feeding ratio of AnFc/An . In addition, a

relatively strong peak near 269 Da is observed in all the spectra, which can be attributed to [CSA+K]$^+$.